2020

Examining the Creation of Information Privacy Culture in Healthcare Organizations to Achieve Collective HIPAA Compliance Practice

Osborne Obeng

Examining the Creation of Information Privacy Culture in Healthcare Organizations to Achieve Collective HIPAA Compliance Practice

by

Osborne N. Obeng

A dissertation submitted in partial fulfillment of the requirements for the degree of
Doctor of Philosophy
in
Information Systems

College of Computing and Engineering
Nova Southeastern University

2020

We hereby certify that this dissertation, submitted by Osborne N. Obeng conforms to acceptable standards and is fully adequate in scope and quality to fulfill the dissertation requirements for the degree of Doctor of Philosophy.

Souren Paul — 5/18/2020

Souren Paul, Ph.D.
Chairperson of Dissertation Committee — Date

5/18/2020

Ling Wang, Ph.D.
Dissertation Committee Member — Date

5/18/2020

Inkyoung Hur, Ph.D.
Dissertation Committee Member — Date

Approved:

05/18/2020

Meline Kevorkian, Ed.D.
Dean, College of Computing and Engineering — Date

College of Computing and Engineering
Nova Southeastern University

2020

An Abstract of a dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy

Examining the Creation of Information Privacy Culture in Healthcare Organizations to Achieve Collective HIPAA Compliance Practice

by
Osborne N. Obeng
May 2020

The digitization and transfer of patient records has increased the risk of patient data being improperly handled by healthcare organizations. In light of this growing concern, the United States government and state authorities have implemented various regulations to mitigate the privacy concerns. Beside privacy regulations, healthcare organizations have been forced by other pressures such as organization's competitive pressures, resources, ethical responsibilities, and legitimacy to implement privacy safeguards. However, surveys show that healthcare organizations fail to achieve information privacy compliance. This study examined the creation of information privacy culture from the different occupational communities in healthcare organizations to help achieve information privacy compliance. This research applied the dynamic social impact theory (DSIT) and the theory explains how coherent structures of cultural elements are developed from the interactions of people located in the same spatial location. This study argues that interaction is important because healthcare professionals have different attitudes about each other's field that requires cultural synergy to enable healthcare organizations to achieve HIPAA compliance practice. Survey data was collected from two healthcare organizations with one being exposed to information privacy message to its' occupational communities and the other without being exposed to information privacy message to its employees to test the hypotheses. A total of 98 participants were included in Hospital A, and 83 participants were included in Hospital B. Gender was distributed between 86 females, 88 males, and 7 no response. Multiple linear regression analysis was used to test the relationships between the variables and determine the fitness of the research model. A series of independent sample *t*-tests were conducted to examine for differences in the scales by hospital. The findings supported the fundamental predictions of the study that communicating patients' information privacy concerns as issue of importance to the occupational communities will lead to the development of information privacy belief and a positive attitude toward patient information privacy concerns. The information privacy attitude will have a positive impact in creating information privacy culture. Tolerance of diversity on the other hand, will have a positive effect on reducing job tensions between the different groups. It was finally predicted that the coherent culture created, and reduced tension will have a positive impact on collective HIPAA compliance practice. The results supported all the key assumptions of the study and the findings were consistent with extant literature.

Acknowledgments

The journey to become a PhD is like climbing a mountain and comes with challenges, hardship, and frustration. As I reach the top of the mountain and experience the feeling of fulfillment, I realized that even though only my name appears on the cover of this dissertation, I cannot forget the great many people who have contributed to my accomplishment.

I would like to thank God for giving me the strength, knowledge, ability and opportunity to undertake this endeavor as well as perseverance to successfully complete it. Without God's blessings, this achievement would not have been possible.

I would like to express my sincere appreciation to my advisor and dissertation chair, Dr. Souren Paul for his support and patience. Without your guidance, this dissertation would not have been possible and I shall forever be grateful to you for your assistance. To my dissertation committee members, Dr. Ling Wang and Dr. Inkyoung Hur, thank you for your constructive feedback and advice to help me realize my dream.

In a similar vein, I would like to recognize Dr. Gurvirender Tejay and Dr. Abdullah Faisal for your contributions to my intellectual growth during my years of study at the Nova Southeastern University and Lewis University. Especially Dr. Faisal, you have been like a brother and mentor to me and I am forever grateful to you.

I would like to say thanks to my colleagues and friends: Dr. Patrick Offor, Dr. Darrell Eilts, Dr. Karla Clarke, Dr. Zareef Mohammed, and Fernando Lopez for your invaluable advice, constructive feedback, and for always being very supportive of my work.

To my friends in Chicago (so many to list here but you know who you are!) and around the world, thank you for supporting me through this entire process. Special thanks to my friends Angela Waller and Chrystal Brown for proofreading my work and offering me editing advice.

I would like to express my deepest and sincere gratitude to my parents for their love, prayers, caring and sacrifices for educating and preparing me for my future. You instilled in me the sense of gratefulness, selflessness, integrity, hard work, loving, and respect for everyone regardless of their social status.

I am grateful to my siblings for their continuous and unparalleled love and support. Special thanks to my brother Isaac Nkansah for supporting me and helping my kids with their sporting activities while I worked on my research.

Finally, to my caring, loving, and supportive wife, Alice: my deepest gratitude. Your encouragement when the times got tough are much appreciated. It was a great comfort and relief to know that you were willing and able to take care of our household activities while I completed my work. My profound gratitude to our three children, Ethan, Vanessa, and Ivana for inspiring me and sacrificing countless hours to help me complete this journey. My heartfelt thanks.

Table of Contents

List of Tables

Tables

List of Figures

Figures

Chapter 1

Introduction

1. Background

Information technology has become the centerpiece and the driving force for many industries and organizations. The healthcare industry is no different and is one of the areas in which information technology is being aggressively implemented to gain the benefits of information technology. This implementation is also due to the government's "Meaningful Use" mandate (Blumenthal & Tavenner, 2010). It is well documented that the use of information technology in healthcare organizations increases efficiency, reduces cost, enhances quality of care and increases patience safety (Karsh, Weingner, Abbott, & Wears, 2010).

Many healthcare organizations are faced with patient information privacy challenges. The digitization and transfer of patient records has increased the risk of patient data being improperly handled by healthcare organizations. Healthcare organizations, because of the complex nature of data access for various reasons, are often given broader access privileges and adopt 'Break the Glass' policies to facilitate timely and effective care (Appari & Johnson, 2010). In light of this growing concern, the United States government and state authorities have implemented various regulations to mitigate the privacy concerns. For example, the Gramm-Leach-Bliley Act of 1999 in the financial sector set the guidelines and incentive for firms to protect client's personal information. Other industry examples are the Children's Online Privacy Protection Act and the Family

Education Rights and Privacy Act. As the digitization and transfer of patient data increases, the Health Insurance Portability and Accountability Act (HIPAA) was passed to regulate healthcare organizations to protect patient information. Beside regulations, healthcare organizations are being forced by other pressures such as industry competitions and ethics to implement privacy safeguards (Greenaway & Chan, 2005; Smith, 2000).

Survey reports, however, show that healthcare organizations are failing to achieve privacy compliance (Bishop et al., 2005). In addition, extant literature on the phenomenon has explained the causes of failure to the privacy compliance by healthcare organization in general (Johnston & Warkentin, 2008). It is fair to argue that regulatory pressure alone does not influence organizations to commit to protecting patients' health information. Contradictory laws and policies at various government levels have fostered confusion about achieving information privacy compliance (Fernando & Dawson, 2009). Regulatory mandates are often criticized for lack of clarity. Current low level of full compliance among healthcare organizations call for attention from the research community to examine compliance related issues on other fronts (Appari & Johnson, 2010). Hence, factors such as cultural values, the organization's competitive pressures, resources, ethical responsibilities, and legitimacy were identified to enable healthcare organizations to comply with the privacy regulations (Parks, 2010). Notably, the empirical examinations of the phenomenon based on the aforementioned factors have been from the information privacy non-compliance perspective. However, few studies, if any have examined the creation of information privacy compliance culture from the different occupational communities within healthcare organizations, which could provide

a collective information privacy practice in the healthcare organizations and toward information privacy compliance. In addition, the notion is that such community-level culture or information privacy cultural cohesiveness will help in reducing existing tensions among and between the different groups within the healthcare community and will help to address organizations' healthcare privacy compliance failures. Therefore, this study sought to fill the gap in literature by using the dynamic social impact theory to examine the creation of coherent information privacy culture in healthcare organizations to achieve information privacy compliance.

1.1. Problem Statement

The objective of this study is to examine the creation of information privacy culture among the different occupational communities in healthcare organizations that could help an organization to achieve collective HIPAA compliance practice. In healthcare organizations, many different occupational communities (e.g., physicians, nurses, technicians. etc.) work and interact with one another (Vaast, 2007). Although, these communities differ in training, activities, and methods, they are active participants relative to patient care. In other words, their goal in providing the best patient care is centric; their approach differs based on their training. Consequently, the resultant tensions between or among the groups make it difficult for an organization to achieve information privacy compliance (Adam and Blandford, 2005).

Harkins (2012) claimed that there is a need to develop an organizational culture that supports interaction. Research shows that culture is a product of social interactions;

however, there is a lack of research investigating how the creation of information privacy culture from the interaction of the different communities in healthcare organizations could help achieve information privacy compliance. Therefore, this study applied the dynamic social impact theory rooted in social psychology to examine the creation of information privacy culture. This paper argues that the creation of a coherent information privacy culture through social interaction is indeed important because healthcare and information privacy professionals have different attitudes about each other's field that requires cultural synergy. The focus of this study is about the empirical examination of how creating a coherent information privacy culture could enable healthcare organizations to achieve collective HIPAA compliance practice.

1.2. Dissertation Goal

The main goal of this empirical study is to examine the creation of information privacy culture that could help healthcare organizations to achieve collective HIPAA compliance practice. Hofstede and Bond (1984) argued that culture does not only affect psychological processes but also the sociological, political, and economical functioning of social systems. To accomplish this goal, this study assessed how spatial colocation will influence information privacy professional's beliefs and foster relationship between other occupational communities in an organization. Stewart and Gosain (2006) argued that it is important to understand why people commit to open source software development by examining the content of the open source software community's ideology. Cullum and Harton (2007) showed that the dynamic interpersonal influence process can lead to individual's attitude to converge within social network over time.

This research further examined how the creation of a cohesive information privacy culture could reduce job tension between the different occupational communities leading to collective information privacy practices. According to Latane (1996), culture can result from individual differences and their ability to influence and affect each other in a dynamic iterative process of reciprocal and recursive influence. Finally, the study assessed the impact of information privacy coherent culture in an organization and how it influences the collective HIPAA compliance practice.

1.3. Research Questions

To achieve the research goal, this study sought to answer the following questions:

RQ1. *Can a coherent information privacy culture be created from the different occupational communities?*

RQ2*. Does creating a coherent information privacy culture lead to collective HIPAA compliance practice?*

1.4. Relevance and Significance

HIPAA regulations specify administrative, physical, and technical safeguards for organizations to use in an effort to secure the confidentiality and integrity of patients' health information (Parks, 2010). Yet, extant literature shows that healthcare organizations fail to achieve privacy compliance (Fernando & Dawson, 2009). However, there is lack of studies investigating how a coherent information privacy culture could

have positive impact on healthcare organizations privacy compliance. Therefore, this study argues that healthcare organizations need a coherent information privacy culture which could help to reduce job tensions among the different groups and as a result, achieve information privacy compliance.

This study enabled researchers to understand how coherent culture could be created from the different occupational communities to reduce job tension between the groups and its impact on healthcare organizations to achieve collective information privacy compliance practices. Another major contribution of this study is to apply dynamic social impact theory to explain HIPAA compliance failure phenomena. This contributed to information privacy researchers understanding of how the dynamic social impact theory could be used as a framework to create information privacy culture within healthcare organizations. Management could leverage the cultural values identified in the process to influence employees to achieve information privacy compliance. Information privacy awareness programs would be introduced to the members of various communities based on the cultural values identified.

1.5 Barriers and Issues

As the goal of this research is to empirically examine the creation of information privacy culture, one of the challenges will be about measuring the information privacy culture construct because of the many ways culture has been defined and conceptualized (Ford et al. 2003; Hoffstede 1983; Leidner & Kayworth 2006; Straub et al. 2002). Other barriers that could impede this project will be the collection of appropriate data for

analysis. There will be a potential challenge in finding healthcare organizations willing to participate in the study especially the organization with poor HIPAA compliance record. Organizations HIPAA compliance record will be assessed in the study and the organizations with poor compliance record may be unwilling to provide the information for fear driving patients away. Physicians may be unwilling to participate in the study because of their busy schedule. The physicians may view the interviews and surveys as waste of time and money as physicians primarily make money by seeing patients.

1.6 Assumptions, Limitations and Delimitations

The study assumed that the different professionals in healthcare organizations have different attitudes about each other's field that requires cultural synergy.

The survey length was considered a limitation as it contained 39 questions and was estimated to be completed in 15 to 20 minutes. Several studies have shown that there is a negative relation between survey length and response rate and quality (Deutskens et al., 2004; Heberlein and Baumgartner, 1978; Yammarino et al., 1991).

The two organizations selected for this study were small community hospitals which may not accurately reflect HIPAA compliance practices as other large institutions.

1.7 Definition of Terms

Clustering - Individuals in social space will influence each other and become similar to their neighbors (Latane, 1996).

Collective information practice - The collective understanding of the ways in which information should be shared, withheld, and managed (Dourish and Anderson, 2006).

Consolidation - The majority grows in size over time, and the minority decrease in numbers (Latane, 996).

Continuing Diversity - As a result of clustering, members of minorities are often shielded from the influence attempts of the majority, and their beliefs continue on within the group (Latane, 1996).

Correlation - Over time the group members' opinions on other issues, even one that are not discussed in the group, converge, so that their opinions on a variety of matters are correlated (Latane, 1996).

Dynamic social impact theory (DSIT) - Explains how coherent structures of cultural elements are developed from the interactions of people located in the same spatial location based on four basic patterns: clustering, consolidation, correlation, and continuing diversity (Latane, 1996).

Exposure to Message - Exposing patient information privacy concerns message as an issue of importance to the occupational communities through interactions (Fishbein and Middlestadt, 1995).

Formation of culture - Reciprocal and recursive process of individual social influence through communication of patient information privacy concerns and leads to an organization of associated beliefs at the larger group level (Harton & Bourgeois, 2004).

Health Insurance Portability and Accountability Act (HIPAA) - Regulation enacted by the government to protect patient health information.

Information privacy - Ability of the individual to personally control information about one's self (Stone et al. 1983, p. 461).

Information Privacy Attitude - Occupational communities' belief in information privacy will grow into positive attitude toward patient information privacy concerns (Angst and Agarwal, 2009).

Information Privacy Belief - Occupational communities developing information privacy belief about patient information privacy concerns (Fishbein and Ajzen, 1975).

Information Privacy Culture - Ideologies, coherent sets of beliefs, basic assumptions, shared sets of core values, important understandings, and the collective will (Sackmann, 1992).

Perceived issue importance - The personal importance a person attaches to an issue (Latane, 1996).

Occupational communities - The different professionals in healthcare organizations such as physicians, nurses, technicians, public safety officers, environmental services, dietitians, etc.

Professional Issues Integration - Professional issues integration refers to the extent of reciprocal support the occupational communities receives for their professional concerns other than information privacy issues (Feldman, 1968).

Reduced Job tension - Individual's feelings associated with perceived positive consequences of role perceptions (Lusch & Serpkenci, 1990).

Tolerance of diversity - Occupational communities' acceptance of their professional differences (Onyx and Bullen, 2000).

1.8 Summary

In this chapter, the background of the study was introduced to show the benefits and challenges information technology in healthcare organizations. The problem statement and the research goals were presented. The research questions and significance were also presented. Finally, the chapter identified barriers and issues, assumptions, limitations and delimitations, and definition of terms.

Chapter 2

Review of Literature

2.1 Introduction

To build a solid foundation and establish a strong theoretical background for any research, it is recommended to review prior and relevant literature (Webster & Watson, 2002; Randolph, 2009; Hart, 1998). According to Schwarz et al. (2007), reviewing past and relevant literature can offer benefits such as shared perspectives and future research directions to the research community. Information privacy literature on culture shows that organizational culture and individual culture perspectives have significant impact on information privacy concerns and compliance (Culnan & Armstrong 1999; Dinev & Hart, 2006; Malhotra et al. 2004), and technology adoptions and acceptance (Srite & Karahanna, 2006). Information technology helps healthcare organization in several ways, yet the introduction of information technology is often met with privacy concerns and cultural resistance (Coombs et al. 1992). Researchers (Milberg et al., 2000; Bellman et al., 2004) drew on organizational cultural stream of studies to examine the differences in information privacy concerns across cultures. Many of the information privacy culture related studies have centered on comparing national cultures, organizational, and professional cultural differences (Karahanna, Evaristo, & Srite, 2005). This study argues that creating a coherent culture from the different occupational communities could reduce tension between the groups in healthcare organizations and impact the collective information privacy practices of the organizations.

This study reviews extant literature to uncover what is known and unknown about the topic and build upon it. The phenomenon under investigation is information privacy compliance failure in healthcare organizations and the examination of information privacy culture creation. As an interdisciplinary research, the theoretical foundation integrates theories from information systems, information privacy concerns, information privacy attitudes and beliefs, social psychology streams of studies, and the areas of culture creation.

2.2 Information Privacy Concerns

The research model of this research integrates constructs from information privacy concerns studies as HIPAA regulation is an attempt by the United States government to address patients' information privacy concerns. Therefore, it is important to review literature on some of the theories that have been developed and used to address consumer information privacy concerns. Angst et al. (2006) argued that patients' perception of privacy varies depending on the technology involved and their own background. Malhotra et al. (2004) developed the multi-dimensional theoretical framework of Internet Users' Information Privacy Concerns (IUIPC), and recognized that there are multiple aspects of information privacy concerns. The authors argued that much of the literature has addressed information privacy issue within the context of threats from traditional direct marketers. The significant findings of the paper include presenting how useful the notion of justice and fairness is by identifying the dimensionality of IUPC, which consists of collection, control, and awareness. On the other hand, Awad and Krishnan (2006) assessed the relationship between information transparency and

consumer willingness to take part in personalization on web advertising. The paper used the utility maximization theory framework to examine whether consumers are willing to be profiled online for personalized offering. Similar to Malhotra et al. (2004), the paper argued that in the offline settings there is no clear way to visually assess consumer's personal data. The study found that users' previous invasion experience did not have effect on users' willingness to be profiled for online services. Liu et al. (2005) proposed and tested a theoretical model that attempted to explain how privacy influences trust and trust influences consumer behavioral intention for online transaction. The authors argued that previous studies have not included privacy as a major antecedent to trust. Similarly, Moore (2005) aimed to answer the basic question of whether online consumers understand or care about privacy seals and whether such measures have any impact on the propensity to shop online.

Milberg et al. (2000) examined the internal factors that influence a society's approach to the governance of corporate information privacy practices; and developed a conceptual model tested cross-cultural sample from 19 different countries showing the cultural impact on privacy concerns. The study found that a country's regulatory approach to the corporate management of information privacy is affected by its cultural values and by individuals' privacy concerns. Similarly, Smith et al. (1996) study developed and validated a measurement instrument that can be used to measure individuals' concerns about organizational information practices. The paper noted that organizational practices, individuals' perception of these practices, and societal responses are linked in many ways. The authors argued about the lack of validated instruments for measuring individual's concerns about organizational information privacy practices. The

result was a 15-item instrument with four subscales tapping into dimensions of individuals' privacy concerns about organizational information privacy practices. Steward and Segars (2002) study further tested the CFIP instrument developed by Smith et al. (1996) by examining its theoretical meaning, dimensionality, reliability, and validity. The authors argued that within the realm of information systems research, several observers have noted that there is an alarming lack of effort in validating instruments. The paper's finding support CFIP as multidimensionality construct and well measured by first-order construct. Lin and Wu (2008) examined how government involvement, corporate policies, consumers' attitude (social exchange, procedure fairness, trust, and knowledge about CRM) influences consumers' privacy concerns in the CRM context. Moreover, Pavlou et al. (2007) drew on the principal-agent theory to examine the consumer privacy concerns.

Dinev and Hart (2004) found that four dimensions (finding, abuse, vulnerability, and control) measures consumers' privacy concerns. Smith et al. (1994) also shows that information privacy concerns are not one-dimensional but consist of number of overarching factors. They identified four dimensions of personal information concerns to be (1) Collection, a perception that there is too much information sharing or data collection going on; (2) Unauthorized secondary use, this is the perception that personal data collected for one thing are used for other things without permission; (3) Improper access, refers to sharing data within an organization on the basis of "need to know"; (4) errors, that can be prevented if proper attention is given. Hierarchical level of information privacy concerns can be associated with various dimensions and may be culturally influenced (Milberg et al. 1995). This study argues that patients' information privacy

concerns and Muris (2001) found that despite the benefits of information sharing, concerns about privacy are real. Milberg et al. (1995) study found that British citizens based on their deferential democratic balance might be expected to produce concerns about the various dimensions of information privacy different from those produced by the citizens of the United States because of their egalitarian democratic balance. Dinev and Hart (2006) addressed the paradox where consumers' actual behavior may be different from their revealed privacy preference and was supported by (Norberg et al., 2007). The authors based their argument on privacy calculus or the cost and benefit calculation which states that consumers will participate in online shopping if the benefits are greater than the cost. The findings of the study showed that the factors that strongly relates to the willingness to provide personal information over the internet were privacy concerns. Awad and Krishnan (2006) used the economic maximization theory in their study and some of their findings are similar to (Malhotra et al. 2004).

Chen and Rea (2004) investigated users' privacy concerns and how users control personal information. The authors argued that since companies are lacking in privacy creation and implementation and there is no technology in place to help users determine what information to share, users have found other ways to protect their personal information. The papers' findings suggest that users have adopted falsification, passive reaction, and identity modifications as privacy control techniques. Hsu (2006) study focused on the relationship between online privacy and websites category. The paper suggested that there has to be a paradigm change from the adversarial view which does not work in the internet context to a situational paradigm on information privacy. The findings suggested that respondents from four different countries have different privacy

concerns based on Websites categories. In comparison, Hsu (2006) examined information privacy concerns on the situational and websites categories and Chen and Rea (2004) focused on individuals controlling their personal information privacy. Liu and Arnett (2002) researched the extent to which large global businesses have responded to privacy concerns and how they manage their Web sites with regard to collection and use of personal information. The study findings show that countries vary in their privacy policies on their web sites as a visible sign of attention to privacy concerns. Belenger et al. (2002) examined the relative importance of consumers purchasing goods and services over the Web, of four common indices: third party privacy seal, privacy statements, security features, and third-party security seal. Schwaig et al. (2006) reviewed the privacy policies and practices of Fortune 500 companies and assessed how well their privacy policies adhered to fair information practices. Their findings indicated that firms believed that it was important to specify the type of information collected and the internal information practices and collaborate with Liu and Arnett (2002) conclusions. Hui et al. (2007) assessed how consumers value privacy statements and privacy seal, and the privacy statements and seals affect consumers' disclosure of personal information. The paper argued that little research has been done to assess their influence on consumer behavior.

This study argues that information privacy compliance culture could be formed from the different occupational communities or sub-cultures. Cullen (2008) investigated where culture and cultural concepts of identity may impact on individual's concept of privacy and concerns about personal information held by government. Consistent with Dinev et al. (2006) and Rose (2006) findings, the paper indicated that New Zealand

ethnic diversity requires a better understanding from government of how cultural identity can impact information privacy and trust in government. Rose (2006) paper discussed personal information privacy concerns in the context of globalization or cross-border data flow. On the other hand, Dinev et al. (2006) study examined cross-cultural differences in beliefs such as propensity to trust, institutional trust, and inhibitors such as perceived risk and privacy concerns. Dinev et al. (2006) argued that Italy and U.S cultures are different and therefore, impact their privacy concerns differently. Culnan and Armstrong (1999) addressed the tensions that arise between the collection and use of personal information people provide in the course of consumer transactions, and individuals' information privacy. Their findings suggested that companies can gain competitive advantage through customer retention by implementing procedural fairness. Culnan (1993) sought to understand how the overall attitudes toward information privacy and direct marketing can differentiate consumers with positive attitudes from consumers with negative attitudes toward the secondary use of personal information for direct marketing. The paper argued that with the understanding, appropriate business policies can be implemented voluntarily to address public concerns about specific information practices that may be perceived as a threat to privacy. Their paper differs from Culnan and Armstrong (1999) because it deals with attitudes toward secondary use of data and not procedural fairness.

Table 1 shows the synopsis of the information privacy and privacy concerns literature including the study, research problem or objective, theoretical framework, sample size and instrument, and the main findings or contributions.

Table 1

Summary of Information Privacy Concerns Literature

Study	**Research Problem**	**Theoretical Framework**	**Sample**	**Instrument**	**Main Findings or Contributions**
Awad and Krishnan (2006)	Investigation of the relationship between consumer's information transparency and their willingness to take part.	Utility Maximization Theory	Over 400 online consumers participated in the survey	Survey Instrument was used	Consumers with past privacy invasion experience are less likely to be profiled for personalized advertising. For utility maximization, consumers chose to take part in online personalization based on the benefits.
Belanger et al. (2002)	Assessed the relative importance of consumers purchasing goods and services over the Web, of four common indices	Descriptive framework	140 US students participated in the survey	Survey instrument and questionnaire were used.	Trust indices may appear to be important to consumers but may not necessarily mean that consumers trust the marketers
Chen and Rea (2004)	Investigated users' privacy concerns and how users control personal information	Review	92 students participated in the survey	Survey instrument was used	Users have adopted falsification, passive reaction, and identity modifications as a privacy control techniques.

Table 1

Summary of Information Privacy Concerns Literature (continued)

Study	**Research Problem**	**Theoretical Framework**	**Sample**	**Instrument**	**Main Findings or Contributions**
Cullen et al (2009)	Investigated where cultural concepts of identity may impact on individual's concept of privacy and concerns about personal information held by government	Review	92 participants from New Zealand and Japan	Interview	The study found that privacy of personal information was important concern for all the groups
Culnan (1993)	Examined the attitudes toward the secondary use of personal information	Categorization Theory	126 Students were surveyed	Survey instrument was used	Consumers with positive attitude toward privacy were less concern about the use of their secondary information
Culnan and Armstrong (1999)	Assessed the tensions that arise between the collection and use of personal information people provide in the course of business transactions	Review	Random sample of 1000 US adults	Survey instrument was used.	Organizations can gain competitive advantage through customer retention by implementing policies and procedural fairness.

Table 1

Summary of Information Privacy Concerns Literature (continued)

Study	**Research Problem**	**Theoretical Framework**	**Sample**	**Instrument**	**Main Findings or Contributions**
Dinev and Hart (2006)	Examined consumers' actual behaviors and their revealed privacy preference and the predictors of a user intentions	Privacy Calculus	Sample size was 369	Survey instrument was used	Factors that strongly relates to the willingness to provide personal information over the internet were privacy concerns, Internet trust, and personal Internet interest.
Dinev et al. (2006)	Investigated cross-cultural differences in beliefs such as propensity to trust, institutional trust, and inhibitors such as perceived risk and privacy concerns	Privacy Calculus	Over 1200 participants	Survey instrument was used	For consumers to participate in ecommerce, there must be a high level of trust than risk and privacy concerns.
Hsu (2006)	Addressed the relationship between online privacy and Websites category	Review	400 Surveyed	Survey instrument was used	Users' privacy concerns do not reflect their online shopping practices.

Table 1

Summary of Information Privacy Concerns Literature (continued)

Study	Research Problem	Theoretical Framework	Sample	Instrument	Main Findings or Contributions
Hui et al. (2007)	Examined how consumers' value privacy statements and privacy seal, and the privacy statements and seals affect consumers' disclosure of personal information	Choice Theory	600 business students were surveyed	Survey instrument was used	The existence of privacy statements influenced more people to give their personal information to a website but not existence of privacy seal
Liu and Arnett (2002)	Examined how much large global businesses have responded to privacy concerns	Review	500 websites visited	Content analysis	Countries vary in their privacy policies on their web sites as a visible signs of attention to privacy concerns
Malhotra et al. (2004)	Developing theoretical framework on the dimensionality of Internet users' information privacy concerns (IUIPC)	Social Contract Theory	742 respondents were surveyed	Field survey	The first-order dimensions: collections, control, and awareness showed desired metric properties in the online privacy context

Table 1

Summary of Information Privacy Concerns Literature (continued)

Study	Research Problem	Theoretical Framework	Sample	Instrument	Main Findings or Contributions
Milberg et al. (2000)	Assessed the internal factors that influence a society's approach to the governance of corporate information privacy practices	Review	595 internal auditors from 19 countries	Survey was used	Corporate management of information privacy is impacted by its cultural values and by individuals' privacy concerns.
Pavlou et al. (2007)	To examine uncertainty in online exchanges and mitigation factors	Principal-Agent Theory	521 consumers	Survey instrument was used	Trustworthiness can be enhance to mitigate the uncertainty on providing information on the website

2.3 The Elaboration Likelihood Model

Information privacy concerns in this research is proposed as an issue of importance to influence professionals in healthcare organizations to develop information privacy beliefs. Angst and Agrawal (2009) argued that it is important to frame issues and the issue involvement help users to adopt electronic health records (EHR). The Elaboration Likelihood Model (ELM) theory has been used in many information systems adoption and privacy studies to persuade users (Bhattacherjee & Sanford, 2006; Angst & Agrawal, 2009; Greiner & Wang, 2011), and this research draws its issue of important

construct from Elaboration Likelihood theory. To investigate attitude formation toward web personalization, Ho and Boddoff (2014) modified the ELM theory to study how the web personalization could be leveraged to in advertising and sales revenue. Petty and Cacioppo (1981) developed the ELM as a persuasion theory with the idea that a person will be influenced when he or she is exposed to an important message. The model suggests that due to the influencing factors, the person's behavior will subsequently change toward the message and in this study, the message is patient information privacy concerns. The ELM theory indicates that there are two routes to influence users' behavior or attitude change. One of the routes is the central route. The central route uses logic related to information and it involves in more effort and time to examine the information. The other route is the peripheral route and the peripheral route does not require as much effort as user's attitude are changed through information cues (Cacioppo & Petty, 1986).

Leveraging the ELM as a theoretical foundation, Zhou (2012) investigated users initial trust development in mobile banking. The study argued that users access mobile banking information on their account and, if the information are not accurate, they may lose trust in the online banking. As a result, information quality is needed to persuade them to use and trust mobile banking. This study argues that healthcare professionals need to be persuaded about the importance of patient information privacy concerns which may lead to the development of information privacy beliefs. The Bansal and Gefen (2015) study used the elaboration process to show how privacy assurance mechanisms affects individuals differently based on their privacy concerns. The study found the consumers who have strong concerns about an issue need credible and persuasive message to influence their belief structure. The study argues that there are gaps in the

literature about trust building influence of privacy policies and the moderating role of the privacy concern in trust building process and used the ELM theory to address the gaps. Using the ELM as a theoretical framework, Angst and Agrawal (2009) investigated whether privacy concerns imped the adoption of EHR systems and if the right message can be used to persuade people to accept the technology. Below is their proposed model based on CFIP and ELM theory. Angst and Agrawal (2009) argued that exposure to messages related to EHRs influences peoples' attitude toward the system use. This study argues that information privacy concerns is an issue importance that could be used to persuade the different occupational communities in healthcare organizations to develop information privacy beliefs if properly communicated.

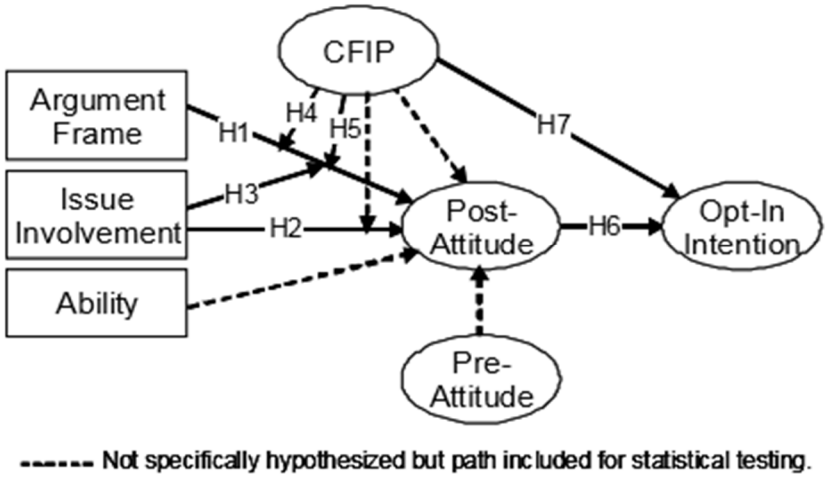


Figure 1. Proposed Research Model by Angst and Agrawal (2009)

Lowry et al. (2012) used the ELM to better understand the persuasiveness of website privacy cues and the inconsistencies between privacy assurance (PA) and privacy seals (PS). The study found that PS's are effective when consumers understand their meaning and believe that they provide assurance. Yang et al. (2006) used the ELM to

investigate the initial trust formation in Internet shopping and the result suggests that framing persuasive arguments for different customers was important for initiating on-line shopping trust building. Studies have relied on ELM dual role to influence individual differences (Petty & Wegener, 19999; Gefen et al., 2003; Pavlou & Dimoka, 2006), and this study proposes that healthcare comprise individuals with professional differences need to be persuaded with information privacy message. Li (2013) integrated social influence theory and ELM to examine the persuasive messages on social influence and its response.

Table 2 shows the synopsis of the Elaboration Literature Model literature including the study, research problem or objective, theoretical framework, sample size and instrument, and the main findings or contributions.

Table 2

Summary of Elaboration Likelihood Theory Literature

Study	**Research Problem**	**Theoretical Framework**	**Sample**	**Instrument**	**Main Findings or Contributions**
Angst and Agrawal (2009)	Applied CFID and ELM to assess the likelihood of individuals change toward opting-in to EHR systems	Elaboration Likelihood Theory	366 subjects were surveyed	Survey Instrument was used	Individuals with privacy concerns can still be persuaded and the result confirms both theories.

Table 2

Summary of Elaboration Likelihood Theory Literature (continued)

Study	**Research Problem**	**Theoretical Framework**	**Sample**	**Instrument**	**Main Findings or Contributions**
Bhattacherjee and Sanford (2006)	Investigated how external processes can impact potential users to accept technology.	Elaboration Likelihood Theory	81 DMS administrators were surveyed	Survey instrument was used.	Trust indices may appear to be important to consumers but may not necessarily mean that consumers trust the marketers
Ho and Boddoff (2014)	To develop and test Theoretical model for users attitude and behavior change toward personalization	Elaboration Likelihood Theory	Lab study with 12 participants	Thought-listing technique was used	Personalization was supported where products could be recommended to users based on the needs
Petty and Cacioppo (1981)	To test two basic routes of persuasions: argument central and peripheral	Elaboration Likelihood Theory	145 student participated in an experiment	Questionnaire	The study found that non content factors such as credibility and attractiveness may be important to persuade people
Zhou (2012)	Assessed consumers initial trust in online banking	Elaboration Likelihood Theory	240 responses	Survey instrument was used	The quality of information was found to be important factor impacting user trusts in mobile banking.

Table 2

Summary of Elaboration Likelihood Theory Literature (continued)

Study	**Research Problem**	**Theoretical Framework**	**Sample**	**Instrument**	**Main Findings or Contributions**
Bansal and Gefen (2015)	Examined how privacy assurance mechanisms affects individuals differently based on their privacy concerns	Elaboration Likelihood Theory	348 undergraduate students were used	Survey instrument	Consumers who have strong concerns about an issue need credible and persuasive message to influence their belief structure
Yang et al. (2006)	Investigate the initial trust formation in Internet shopping	Elaboration Likelihood Theory	160 respondents	Online survey instrument	Framing persuasive arguments for different customers was significant for initiating on-line shopping trust building
Lowry et al. (2012)	Used the ELM to understand the persuasiveness of website privacy cues and the differences between privacy assurance (PA) and privacy seals (PS)	Elaboration Likelihood Model	241 undergraduate participated	Online survey instrument was used	Privacy Seals are effective when consumers understand their meaning and believe that they provide assurance.

2.4 IT-Culture Conflict Theory

The tension between the occupational communities sometime is created by the different subcultures in these communities. Gregory (1983) stated that people take for granted about their own cultural views and evaluate others behavior in terms of their own beliefs and this has the potential to create conflict. The study argues that Ethnocentrism could be used as a cohesive force within cultural groups but most of the times, it leads to conflict in cross-cultural interactions. Several studies have evaluated conflicts and tensions created in organizations and communities because of cultural differences (Gurung & Prater, 2006; Venkatesh & Zhang, 2010). Kappos and Rivard (2008) emphasized that it is vitally important to understand the role of different cultural values and how they impact business and to help solve the conflicts it creates as a result of the mismatch, misinterpretation, or misunderstanding of the cultural values. Iivari and Huisman (2007) examined the relationship between organizational culture and the development of systems by applying competing cultural values in their model.

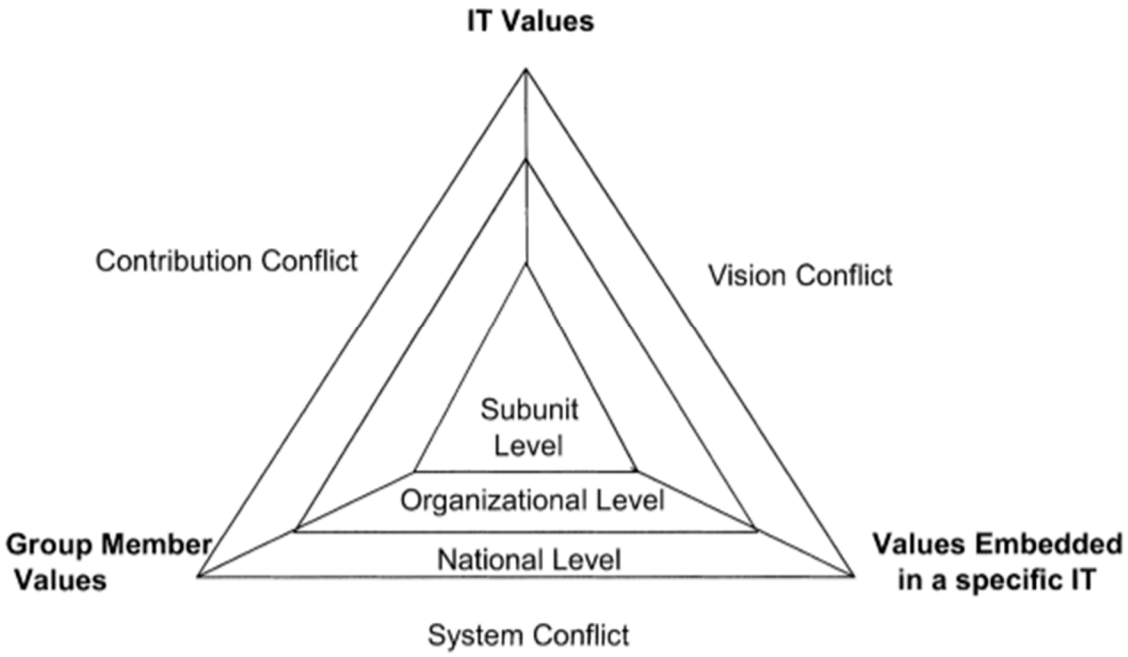


Figure 2. IT-Culture Conflict by Leidner and Kayworth (2006)

Leidner and Kayworth (2006) proposed a theory of IT-Culture Conflict and suggested that people are mostly unaware of their own culture until they come across a different culture from their own. This study drew upon the IT-Culture Conflict Theory to form part of the bases to examine the job tension. To be consistent with the value based perspective of culture, Leidner and Kayworth (2006) referred to their proposed theory as values and not cultures. IT-Culture Conflict Theory examined three types of values and they are group member values, values embedded in specific IT, and general IT values. The group member values are values held by members of a group that show their beliefs about what is important to that group. This concept is important to this study because the different occupational units have different belief systems and that creates tension. Leidner and Kayworth (2006) relied on prior research (Reichers & Schneider, 1990; Sackmann, 1992) to identify the values important to a particular cultural group. Schein (1985) found

that assumptions are at the core of culture and represents the belief systems that people have about human behavior, relationships, reality, and truth. According to Schein (1985) basic assumptions represent cognitive structures and help members of cultural group to perceive situations and make sense of events, activities, and form the basis for collective action. Leidner and Kayworth (2006) described the values embedded in specific IT as values that are assumed in the occupational practices that IT is designed to help. Dube and Robey (1999) found that the success of projects depend on how much different groups believe in the values embedded in the new software development project. In another study, Ngwenyama and Neilsen (2003) found that assumptions built into a process could be in conflict with the cultural assumption of workers and lead to implementation difficulties. The IT-Culture Conflict Theory concluded that the values embedded in specific IT lead to technology performance outcome greater in situations where the subgroup cultures are more effectively integrated (Robbins, 2000). This research argues that creating a coherent culture with similar values among the different communities will reduce conflicts within the groups leading to HIPAA compliance practice. The third value in the IT-Culture Conflict Theory is the general IT values described as those values that a group ascribes in general to IT. Research findings suggest that information technology is not value neutral and it has inherent values (Gobbin, 1998; Kaarst-Brown, 2004). Feldman and March (1981) indicated that organizations information technology is symbolic and represent the organizations competency. According to Leidner and Kayworth (2006), the general IT values are some of the reasons why organizations invest heavily in information technology.

Table 3 shows the synopsis of the IT-Culture Conflict Theory literature including the study, research problem or objective, theoretical framework, sample size and instrument, and the main findings or contributions.

Table 3

Summary of IT-Culture Conflict Theory Literature

Study	**Research Problem**	**Theoretical Framework**	**Sample**	**Instrument**	**Main Findings or Contributions**
Gregory (1983)	Examined cross-cultural issues in large organizations	Review	75 technical professionals were interviewed	Interview	Researchers can apply native views paradigm to understand the complexity of organizational culture
Venkatesh and Zhang (2010)	Examine the different cultural impact on technology adoption	Unified Theory of Acceptance and Use of Technology	149 employees participated	Survey was used	Effects of social influence on consumers behavioral intentions was moderate with experience
Gurung and Prater (2006)	Addressed the impact of cultural differences on IT outsourcing				Identified a new framework to assess cultural differences in IT outsourcing
Kappos and Rivard (2008)	Reviewed the role of IT culture in development, integration, and process	Review	None	None	Culture influences IT development and integration.

Table 3

Summary of IT-Culture Conflict Theory Literature (continued)

Study	Research Problem	Theoretical Framework	Sample	Instrument	Main Findings or Contributions
Iivari and Huisman (2007)	Examined the relationship between organizational culture and the development of systems	Review	387 sample size	Survey instrument	There was a positive association between development culture and SDM deployment
Leidner and Kayworth (2006)	Assessed the linkages between Information Technology and culture.	Review	None	None	Introduced a framework that explains the inherent conflicts among values that may arise in IT implementation.
Sackmann (1992)	Examined the existence and formation of subcultures in organizations	Review	Fifty-two interviews were conducted in 3 different organizations	Interviews and observations	Different cultures groups were identified to exist within the organizations
Dube and Robey (1999)	Assessed software development activities through cultural analysis of organizational stories.	Review	Interview 38 members	Interview and observation	There are advantages in using different perspective to understand organizational culture.

2.5 Social Identity Theory

Another theory this study drew on for its research model is the Social Identity Theory. The Social Identity Theory was introduced to the information systems research stream as a theoretical approach for studying individual culture in an organization (Straub et al., 2002). The concept of the Social Identity Theory is that individuals perceive themselves to belong to a particular group or not. If they perceive to be part of the group, then they see themselves as members of the in-group, and if they perceive themselves as not been part of the group, then they consider the other group as an out-group (Tajfel, 1970a). The individuals who believe that they are part of the in-group will operate according to the norms and beliefs of the in-group (Turner, 1982). Drawing on the Social Identity Theory (SIT), Straub (2002) introduced the virtual onion concept of culture. The onion metaphor was explained that culture has different layers and the different layers of culture can influence an individual's behavior and that each individual is influenced by certain layers. The SIT assumes that an individual will identify themselves as part of different types of culture and over time will be able to identify themselves in a certain culture. In Straub's view, individual's culture and experience can be changed based on the situation. This study drew on the SIT and Straub's proposed layers of culture because of the different professional communities involve in healthcare organizations and the desire to influence them through issue of importance.

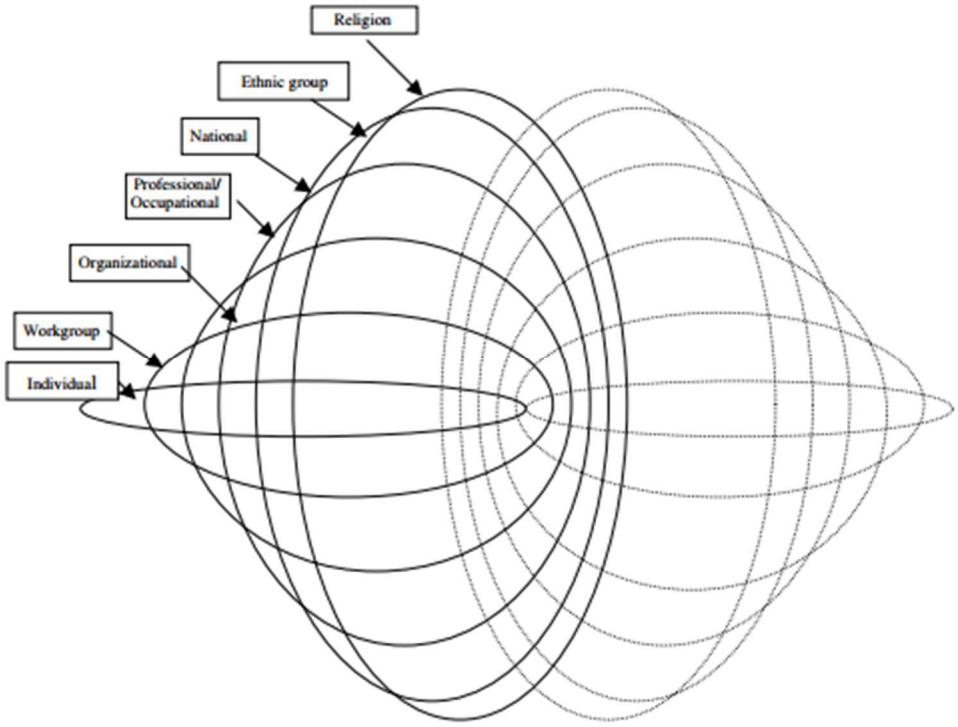


Figure 3. Virtual Onion by Gallivan and Srite (2005)

Ford and Chan (2003) investigated knowledge sharing in an organization across different cultures and argued that it is important for organizations to combine multiple cultures to derive the best values and norms. Without creating an appropriate culture, it will be difficult for organizations to take advantage of knowledge sharing (Gold & Malhotra, 2001). After reviewing literature on information technology and culture, Gallivan and Srite (2005) used the SIT to argue that national and organizational cultural streams of studies are not viewing culture in a united front that has the potential to shape individuals' beliefs and norms. Walsh and Kefi (2008) proposed Spinning Top Model based on Gallivan and Srite (2005), and argued that the SIT is a solid foundation to measure individual level of culture. Their research suggested that examining IT culture at the individual level is important because the individuals' values may identify their group

membership. In their study on IT user culture, Walsh, Kefi, and Baskerville (2010) expanded on the SIT to include an IT cultural layer in the virtual onion model proposed by Straub et al. (2002). In their view, the IT sub-cultural layer comes from the individual membership to a particular group. In line with this study, Gallivan and Srite (2005) suggested that IT cannot focus on one dimension of users' social identity because it will overlook the other identity layers that may make their beliefs and norms stronger. As the goal of this research, creating a coherent culture in an organization to deal with information privacy compliance issues is important and therefore adopts the coherent culture construct from the SIT theory.

Table 4 shows the synopsis of the Social Identity Theory literature including the study, research problem or objective, theoretical framework, sample size and instrument, and the main findings or contributions.

Table 4

Summary of Social Identity Theory Literature

Study	**Research Problem**	**Theoretical Framework**	**Sample**	**Instrument**	**Main Findings or Contributions**
Straub et al. (2002)	Examined alternative theory view of culture	Social Identity Theory (SIT)	None	None	SIT provides helpful framework for integrating diverse cultural views

Table 4

Summary of Social Identity Theory Literature (continued)

Study	Research Problem	Theoretical Framework	Sample	Instrument	Main Findings or Contributions
Ford and Chan (2003)	Investigated knowledge sharing in an organization across different cultures	Hofstede's Theory	Case Study with one organization	Questionnaires, interviews, observations, and a survey were used.	Having the different languages can block the flow of knowledge sharing.
Gold & Malhotra (2001)	Analysis of knowledge management to organizations' core capabilities needed to succeed	Social Capital and Knowledge Integration	1000 senior executives	Survey instrument was used.	
Gallivan and Srite (2005)	Examined the linkage between national and organizational cultural streams of studies and proposed new model	Social Identity Theory	None	None	Virtual onion model was proposed to serve as a coherent way representing diversity in organizations
Walsh, Kefi, and Baskervill e (2010)	Investigated how IT cultures emerge from IT usage	Grounded Theory	8 diverse enterprise (SMEs) and diverse society professionals	Interviews	IT culture can be assessed from IT usage and profiled for targeted training

2.6 Dynamic Social Impact Theory

Information systems research literature shows that social psychology discipline has been used to formulate theoretical foundation for studies and this study will follow in that path by using the Dynamic Social Impact Theory. Latane (1981) proposed three theory principles of how people affect each other in social interaction: social forces, psychological law, and multiplication or division of impact. The social impact theory was developed from research articles related to conformity and intimidation, stage fright and embarrassment, news interest, bystander intervention, tipping, inquiring for Christ, productivity in groups and crowding in rats (Latane, 1981). However, culture is a major factor of social interaction and was not a major component of the social impact theory. Later, Latane (1996) revised the social impact theory to dynamic social impact theory to explain how coherent structures of cultural elements is developed from the interactions of people located in the same spatial location based on four basic patterns: consolidation, clustering, correlation, and continuing diversity. According to the dynamic social impact theory, people in the same vicinity will develop similar culture elements in terms of socially transmitted beliefs, values, and practices that have a major influence through communication (Latane, 1996).

The dynamic social impact theory has been empirically tested and cited by several studies (Kohring, 1996; Nettle, 1999). McIntire et al. (2005) applied the social impact theory to the relationship between number of successful role models and alleviation of performance deficits that women suffer under mathematics stereotype threat. McIntire et al. (2005) selected the social impact theory because it fits the context of their study and was consistent with other sources of social influence. McIntire et al. (2005) argued that in

social impact theory, stereotype threat can be seen as a source of psychological impact that can impinge on a target person or on several target persons. Role models may serve in part as a psychological cohort of other targets. McIntire et al. (2005) study participants included two hundred ninety-five college students (209 women and 86 men). The results matched the social impact model of how successful role models affect performance under stereotype threat better than they matched other similar theories.

Allen and Davis (2010) used the social impact theory as foundation to conduct a study which focused on modeling student decision-making related to selecting science, technology, engineering, and mathematics (STEM) related majors and careers. Allen and Davis (2010) proposed a simple two-period, agent-based simulation based on social impact theory to predict the percentage yield of STEM majors. Students and teachers were used as participants to conduct the study for a period of four years and result suggested significant benefits related to reaching students early, making changes to the job market. Bordogna and Albano (2007) empirically researched opinion formation based on the social impact theory developed by (Latan, 1981). The result accounted for the interaction among the members of a social group under the competitive influence of a strong leader and the mass media, both supporting two different states of opinion. The dynamic social impact theory can be used as a theoretical lens to understand IS tensions between the occupational communities. Mir and Zaheer (2012) used the social impact theory to examine communication tension between consumers and business organizations. The DSIT assume that when other people are the source of impact and the individual is the target; impact should be a multiplicative function of the strength, immediacy, and number of the people (Latane, 1996). Therefore, this study asserts that

the dynamic social impact theory can be applied as theoretical foundation to create coherent information privacy culture and examine the tension between the different communities in healthcare organization.

2.7 Summary

Literature dealing with organizations' approach to the protection of consumer privacy concerns, and organization's privacy compliance drivers were reviewed. Most of the existing studies have categorized privacy safeguards or compliance drivers into institutional legitimacy, Resources, and ethical considerations (Parks, 2012). Literature on formation of culture was reviewed for the theoretical development.

2.8 Theoretical Development and the Research Model

Numerous studies (Hodson, Esses, & Dovidio, 2006: Lehmiller & Schmitt, 2008) have identified issue of importance as a major factor in uniting people from diverse backgrounds to create a coherent culture. Information privacy concern is an issue of importance to all the communities in healthcare organizations and should be a catalyst of uniting all the different groups to achieve collective HIPAA compliance practice. Social psychology research has found that people in close proximity are able to influence each other through inter-personal interactions (Richerson & Boyd, 2005) and the healthcare environment has different occupational groups interacting with each other for the purpose of patient care. The dynamic social impact theory (Latane, 1996) would be applied as a

theoretical foundation to examine the creation of a coherent information privacy culture within healthcare organizations and reduction of job tensions between the groups.

The dynamic social impact theory (DSIT) explains how coherent structures of cultural elements are developed from the interactions of people located in the same spatial location based on four basic patterns: clustering, consolidation, correlation, and continuing diversity (Latane, 1996). According to the DSIT, people in the same vicinity will develop similar culture elements in terms of socially transmitted beliefs, values, and practices that have a major influence in communication (Latane, 1996). This study refers to the influence as transmission of issue of importance from one person or group to another. According to the DSIT, the interactions and transmission of issue importance between the groups leads to the formation of the four patterns of culture creation (Latane, 1996). This study argues that using information privacy concern as an issue of importance, healthcare organization can create a coherent culture through the four culture creation process: clustering, consolidation, correlation, and continuing diversity.

The ultimate goal of this study is to examine the creation of a coherent information privacy compliance culture from the different occupational communities in healthcare organizations and how it could help to achieve collective information privacy compliance practice. The constructs in this study are derived from the DSIT and constructs from information privacy literature. Table 1 depicts the constructs from the DSIT concepts and the description of the concepts in information privacy perspective to fit in the context of the study.

Table 5

Theoretical Concepts and Information Privacy Constructs Definition

DSIT Concepts	**Description of DSIT**	**Information Privacy Construct**	**Description of Information Privacy Construct**	**Reference**
Perceived issue importance	The personal importance a person attaches to an issue.	Exposure to Message: Patient Information Privacy Concerns	Exposing patient information privacy concerns message as an issue of importance to the occupational communities through interactions. Fishbein and Middlestadt (1995)	Latane (1996) Cullun et al. (2011) Bansal et al. (2007)
<u>Formation of culture:</u>				
Clustering	Individuals in social space will influence each other and become similar to their neighbors.	Information Privacy Belief	Occupational communities developing information privacy belief about patient information privacy concerns. Adopted from Fishbein and Ajzen (1975)	Latane (1996) Angst and Agarwal, (2009) Fishbein and Ajzen (1975)
Consolidation	The majority grows in size over time, and the minority decrease in numbers.	Information Privacy Attitude	Occupational communities' belief in information privacy will grow into positive attitude toward patient information privacy concerns. Adopted from Angst and Agarwal, (2009)	Angst and Agarwal, (2009)

Table 5

Theoretical Concepts and Information Privacy Constructs Definition (continued)

DSIT Concepts	**Description of DSIT**	**Information Privacy Construct**	**Description of Information Privacy Construct**	**Reference**
Correlation	Over time the group members' opinions on other issues, even one that are not discussed in the group, converge, so that their opinions on a variety of matters are correlated.	Professional Issues Integration	Professional issues integration refers to the extent of reciprocal support the occupational communities receives for their professional concerns other than information privacy issues.	Feldman, (1968)
Continuing Diversity	As a result of clustering, members of minorities are often shielded from the influence attempts of the majority, and their beliefs continue on within the group.	Tolerance of diversity	Occupational communities' acceptance of their professional differences. Adopted from Onyx and Bullen (2000)	Onyx and Bullen (2000) Valentine and Fleischman (2002)

The research model below is based on the assumptions that exposure to the message of patent's information privacy concerns as an issue of importance will have a positive impact on the occupational communities developing information privacy beliefs. The Occupational communities' developing information privacy belief will lead to a positive attitude toward patient information privacy concerns and will have a causal relationship with information privacy culture. Information Privacy Attitude will have a positive impact in information privacy culture. Professional issues integration will have a causal relationship in creating a coherent information privacy culture and coherent

culture will have a positive effect on collective HIPAA compliance practice. Tolerance of diversity on the other hand, should have a positive effect on reducing job tensions between the different groups and reduced tension should have a positive impact on collective HIPAA compliance practice.

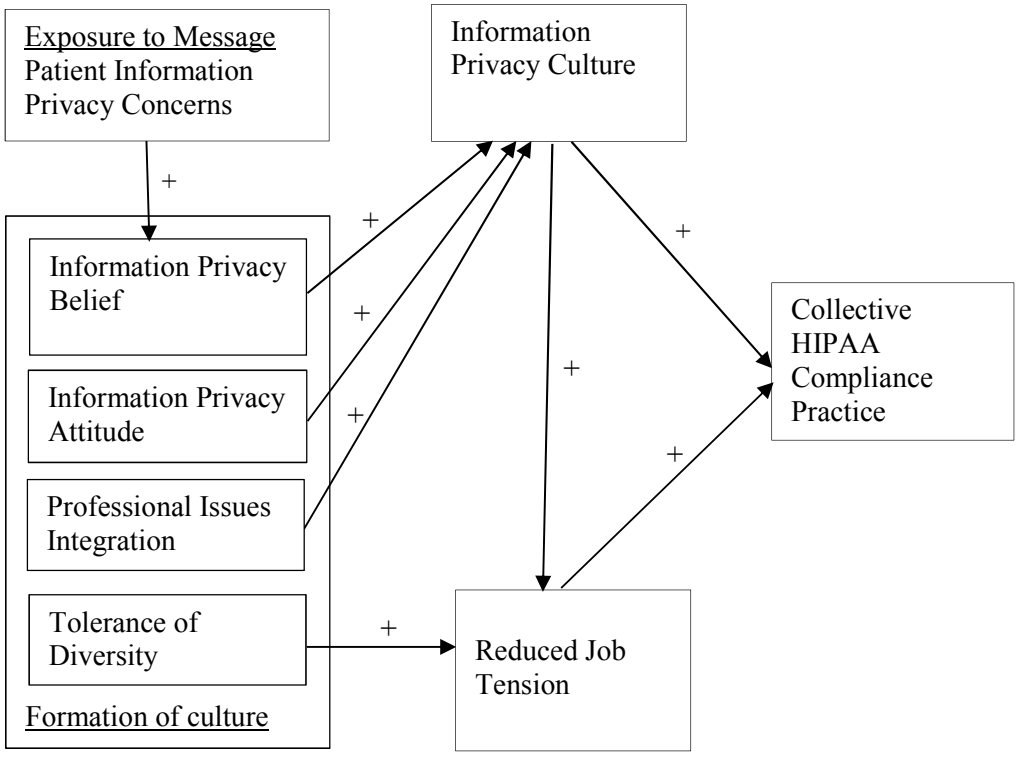


Figure 4. Research Model

Table 6

Summary of Constructs, operationalization and References

Construct	Description	Operationalized	Reference
Exposure to Message: Patient Information Privacy Concerns	Exposing patient information privacy concerns message as an issue of importance to the occupational communities through interactions.	Exposure to message was measured by the level of interaction between the different communities' in an organization and the extent to which information privacy message is discussed. Adopted from Price and Zaller (1993)	Bansal et al. (2007) Fishbein and Middlestadt (1995) Cullum, Okdie, and Harton (2011) Visser et al. (2003)
<u>Formation of culture:</u>			Latane (1996)
Developing Information Privacy Belief	Occupational communities developing information privacy belief about patient information privacy concerns. Adopted from	The Information Privacy Belief construct was measured by assessing the importance of patients' information privacy concerns to the different occupational communities. This study will adopt Visser and Mirabile (2004)	Visser & Mirabile, (2004) Fishbein and Ajzen (1977) Fishbein and Middlestadt (1995)

Table 6

Summary of Constructs, operationalization and References (continued)

Construct	**Description**	**Operationalized**	**Reference**
Information Privacy Attitude	Occupational communities' belief in information privacy will grow into positive attitude toward patient information privacy concerns.	Information privacy positive attitude measure was adopted from Angst and Agarwal, (2009)	Angst and Agarwal, (2009) Fishbein and Ajzen (1977)
Professional Issues Integration	Professional issues integration refers to the extent of reciprocal support the occupational communities receives for their professional concerns other than information privacy issues.	Professional issues integration was measured by the degree to which the occupational communities support other group's professional issues. Adopted from Feldman, (1968)	Feldman (1968)
Tolerance of Diversity	Occupational communities' acceptance of their professional differences.	This study measured the acceptance of professional differences from the communities in the organization. Adopted from Onyx and Bullen (2000)	Onyx and Bullen (2000) Valentine and Fleischman (2002)

Table 6

Summary of Constructs, operationalization and References (continued)

Construct	**Description**	**Operationalized**	**Reference**
Information Privacy Culture	Culture has been defined as the "collective programming of the mind which distinguishes the members of one human group from another"	The information privacy culture was measured through the culture content: values, attitudes, and beliefs. Stone et al. (1983)	Hofstede (1984) Stone et al. (1983)
Reduced Job Tension	Job tension result from an individual's feelings associated with perceived positive consequences of role perceptions.	The reduced job tension construct was measured by how the different occupational communities feel clear about their jobs and without ambiguity of their roles. Kahn et al. (1964)	Lusch and Serpkenci (1990) Kahn et al. (1964)
Collective HIPAA Compliance Practice	Collective understanding of the ways in which patient information should be shared, withheld, and managed.	This study measured the ability of the members of the different occupational communities to adhere to an established information privacy policies and procedures. Oyserman (1993)	Dourish and Anderson (2006) Oyserman (1993)

2.9 Hypotheses

The following section will further discuss the contextual description of the constructs.

2.9.1 *Exposure to Message*

One of the key concepts in the DSIT is the interactions and influencing of individuals in a social space through communications. Angst and Agrawal (2009) noted that issue framing and issue involvement could significantly influence users to adopt electronic health records (EHR). This study refers to the influencing mechanism as exposure to message and this study argues that it is crucial for the different occupational communities to be exposed to the issue of importance through interactions. This paper make an assertion that patient information privacy concerns is an important issue and the dynamic social impact theory suggests that important issues can be used as influencing factor to control discussions and change beliefs.

Information privacy is defined as the "ability of the individual to personally control information about one's self" (Stone et al. 1983, p. 461). This definition and many others indicate that information privacy issue is important to individuals, occupational communities, organizations, and nations. Perception of information privacy concerns mean different to different people depending on the person's background (Hofstede, 1980). For example, the clinical communities (Physicians, Nurses, Technicians, etc.) approach to patients' privacy concerns may differ from the approach of other communities such as Information Technology personnel and management.

Research has examined the perception of privacy concerns among special class of patients such as mental health and HIV patients' point of view. In the research investigating patient confidentiality, Sankar et al. (2003) identified four viewpoints of patient perception. (1) Patients strongly believe that information should be shared only with people involve in their care. (2) Patients believe in the sharing of information among physicians, but HIV patients do not approve and are seen as less likely to share their health information. (3) Many of the patients who approve sharing of their health information among physicians rejected the notion of releasing information to third parties, including employers and family members. (4) Majority of the patients believe that they are responsible of informing their family members about their medical conditions.

Pollach (2006) found that people information privacy concerns were well founded and most companies through their privacy policy statements admitted to the lack of proper privacy practices of data collection and sharing. Kauffman (2006) noted that patients do not want their medical records to be digitized because the privacy concerns. Information privacy is no doubt an important issue in healthcare organizations and should be used to influence the different occupational communities to develop information privacy beliefs. Healthcare environment is typically divided by different occupational communities with competing interest and as a result, achieving HIPAA compliance is difficult if not impossible. This study posited that the occupational communities in healthcare organizations can be persuaded to understand the importance patients' information privacy concerns. Angst and Agarwal (2009) assessed the impact of privacy concerns on attitude change and drew on the elaboration likelihood model to persuade

individuals to support EHR systems adoption. This study argues that exposing information privacy concerns as an issue of importance could persuade the occupational communities to develop information privacy beliefs. Therefore, this study developed the following hypothesis.

> **H_1.** *Exposure to the message of patent's information privacy concerns as an issue of importance to the different occupational communities will have a positive impact in developing information privacy beliefs.*

2.9.2 *Formation of Culture*

Formation of culture is a reciprocal and recursive process of individual social influence through communication of patient information privacy concerns and leads to an organization of associated beliefs at the larger group level (Harton & Bourgeois, 2004). The formation of culture is an overarching construct based on DSIT which identifies four self-organizing processes and these processes are used in this study as sub-constructs. The constructs derived include: developing information privacy belief, Information Privacy Attitude, group issue integration, and tolerance of diversity.

2.9.3 *Information Privacy Belief*

Through interactions and the exposure to message, occupational communities will begin to develop information privacy beliefs about patient information privacy concerns. Culture formation process begin when people or groups move to areas within social space

based on their comfort level, income, age, ethnicity, politics, and other issue of importance to form a belief (Tribe, Schelling & Voss, 1976). In Nowak, Szamrej and Latané (1990) study, people opinion changes throughout the election year and the electorate preferences begin to reflect the common reactions to the events. People are influenced by the images shared through television and people discussing their beliefs and impression with their neighbors, friends, and coworkers (Nowak, Szamrej & Latane, 1990). Social discussions have been found to consistently influence developing belief (Binder, Russell, Sievers, & Harton, 2001; Okdie, 2007). Communication in all forms has been used to change opinions on issues and belief can emerge on issues even when people attitudes are not verbally communicated (Cullum & Harton, 2007; Richerson & Boyd, 2005).

It is fair to argue that the different occupational communities in healthcare organizations will develop beliefs around the information privacy issue if intentionally and well transmitted between the groups. Latane and Wolf (1981)'s social impact theory identified immediacy as one of factors that contribute to clustering. The immediacy factor states that people who are closer in distance tend to interact more than those who are farther away. Employees of healthcare organizations usually work in close proximity to care for patients in the healthcare environment and therefore, can greatly influence one another. As the different groups develop information privacy beliefs around the issue of importance, they will develop positive attitude toward patient information privacy concerns and lead to a coherent information privacy culture. Hence, this study hypothesized that,

H2. *Information privacy beliefs will have a positive impact on creating a coherent information privacy culture.*

2.9.4 *Information Privacy Attitudes Formation*

Occupational communities' beliefs in information privacy will lead to positive attitude formation in patient information privacy concerns. The positive information privacy attitude will become stronger as the groups continue to be exposed to patient information privacy concerns as an issue of importance overtime (Latane & Bourgeois, 1996). This will occur as the groups become more influenced by the viewpoints of the majority and lead to the increase in information privacy views. On the other hand, the number of groups holding minority views or resisting to change their views will diminish over time (Binder et al., 2001; Jackson et al., 2002). It can be argued that using communication as a means to introduce information privacy as issue of importance will change the mindset of the different communities in healthcare organizations to focus on information privacy concerns over time. The conflicts that usually exist between the different occupational communities will diminish in the long run. The positive information privacy attitude will happen as long as there is majority of viewpoints and especially where people are able to communicate and maintain their belief that they are in the majority (Conway, 2004). When individuals or groups are involved in an issue, arguments will happen and influence will depend on the relevance and quality of the issue (Petty & Cacciopo, 1986). Positive information privacy attitude will eventually emerge or will increase in numbers because of the issue of importance. This study argues that as organizations intentionally transmits the information privacy concerns as an issue

of importance; information privacy compliance factors will become the cultural elements in healthcare organizations. According to the DSIT principles, the opposing views from the communities within the organization will diminish over time as a result of the consolidation process. Thus, this study hypothesized that,

> **H3.** *Information privacy attitude will have a positive impact on creating coherent information privacy culture.*

2.9.5 *Professional Issues Integration*

Professional issues integration refers to the extent of reciprocal support the occupational communities receives for their professional concerns other than information privacy issues (Feldman, 1968). The dynamic social impact theory clearly indicates that forming an opinion depends on a number of attributes and overtime the attributes become correlated or integrated with one another (Latane, 1996b). The DSIT states that over time attributes that were formally unrelated among people will become related because as people converge around the issue of important (Harton & Bourgeois, 2004). This study refers to the correlation and the converging of issues as integration of professional issues. As the occupational communities interact and develop information privacy beliefs, they will also develop support for each other's professional concerns beside the initial information privacy concerns. According to Brown (1998) study, people from Western countries are more individualistic than Eastern countries, however, there are correlations in what the people from these regions eat and wear. Communication can be used to influence professional issues integration because as the subgroups discuss the issue of

importance, they could relate to others on their professional concerns. Huguet et al. (1998) study discussed human rights issues and there were significant correlations after discussions than before discussions.

As part of the culture formation process, professional issues integration will happen as the groups may agree on other issues besides the information privacy concerns. Studies show that people who vote Republican also like to listen to country music and the correlation is recognized as a Southern culture in the United States (Weakliem & Biggert, 1999; Mark, 1998). According to the DSIT, people who agree on one issue may agree on another even though, there is no inherent relationship between all of the elements. There are many other issues that physicians, nurses, and the other groups in organizations could agree upon as a result of them developing information privacy beliefs and forming a positive attitude; and could have causal relationship with creating a coherent culture. Therefore, this study hypothesized that,

> **H4.** *Professional issues integration* as *part of the culture formation process will have a positive impact on creating a coherent information privacy culture.*

2.9.6 *Tolerance of Diversity*

Tolerance of diversity is defined as the occupational communities' acceptance of their professional differences (Onyx & Bullen, 2000). DSIT refers to the tolerance of diversity as continuing diversity in the culture formation process where the minority view survives despite the development of information privacy beliefs and attitude. People in the minority tend to be surrounded by the majority and receives support from people who

hold similar views and are protected by the majority (Kameda & Sugimori, 1995). Tolerance of diversity is encouraged in many organizations for the benefits it brings to the organizations such as innovation ideas (Valentine and Fleischman, 2002). Several studies (Latene & Nowak, 1997; Lewenstein, Nowak, & Latene, 1992) computer simulation results show that there must be persuasive strength and immediacy among the agents so that the stronger individuals can protect the minority. As the final phase of the DSIT culture creation process, members of the different communities will have to tolerate other members' views important to them. For example, physicians are expected to continue to want to spend more time seeing patients than worrying about implementation of information privacy safeguards. This study asserts that the tolerance of diversity will help reduce the tensions between the groups as the groups will be less concerned about the shared information privacy beliefs and the positive attitude overtaking their professional differences or diversity (Latane, 1996). Therefore, this study hypothesized that,

> **H_5.** *Tolerance of diversity as the final phase of the culture formation process will have a positive impact on reducing tensions between the different groups.*

2.9.7 *Information Privacy Culture and Collective HIPAA Compliance Practices*

A person's cultural background will have a significant impact on their work practice. Culture as a construct has been defined in many ways depending on the context for which culture is studied. Culture has been defined as the collective programming of the mind which distinguishes the members of one human group from another (Hofstede,

1984). According to Schein (1985), the basic assumptions are at the core of culture and represent the belief systems that individuals have toward human behavior, relationships, reality and truth. Leidner and Kayworth (2006) indicated that culture is a critical variable in explaining how social groups interact. Culture can also be described as an individual's characteristic way of perceiving the man-made parts of one's environment. It involves the perception of rules, norms, roles, and values. This is influenced by various levels of culture such as language, gender, race, and religion, place of residence, and occupation, and interpersonal behavior (Triandis, 1972). There are over hundred ways culture has been defined and described but the above definitions are enough for the context of this study.

The purpose of this study is to investigate how the creation of a coherent information privacy culture will influence information privacy practices thereby helping healthcare organization to achieve collective HIPAA compliance practice. Information privacy culture can be defined as ideologies, coherent sets of beliefs, basic assumptions, shared sets of core values, important understandings, and the collective will Sackmann (1992). It is important to identify information privacy cultural elements that need to be adopted by the different occupational communities to create the coherent culture with healthcare organizations. Steward and Gosain (2006) employed earlier work by Trice and Beyer (1993) to identify Open Source Software (OSS) development ideology that helps the team to function. Ideology is an aspect of culture and is defined as shared, relatively coherently interrelated sets of emotionally charged beliefs, values, and norms that bind some people together and help them to make sense of their world. *Beliefs* refer to understandings of causal relationships, *values* refer to preferences for some behaviors or

outcomes over others, and *norms* refer to behavioral expectations (Trice & Beyer, 1993). It is fair to argue that these cultural elements (beliefs, values, and norms) can be adopted to create a coherent information privacy culture. In the context of information privacy culture, *value* is a person decision to keep another person from acquiring given information about himself or herself, *beliefs* is a perception that the desired level of information control was not achieved during a particular interchange with the other person, and *norm* is experiencing negative effect as a consequence (Stone et al., 1983). This study argues that the information privacy beliefs, values, and norms are personal in nature and should have no regional, ethnic, national, and occupational barriers. As a result, using information privacy concerns as an issue of important will bring together the different occupational communities in healthcare organizations to create a coherent information privacy culture and reduce the tensions and enable collective information practice.

Among the information privacy cultural elements (beliefs, values, and norms), values are acquired through learning experience and practice. Rokeach (1973) described value as an enduring belief that a specific mode of conduct or end-state of existence is personally or socially preferable to an opposite mode of conduct or end-state of existence. Information privacy cultural values can be learned if properly communicated to the communities in healthcare organizations. Value in the context of information privacy is the practice of keeping another person from acquiring given information about one's self and is the issue of importance that need to be learned. Karahanna et al. (2006) indicated that once values are learned, it becomes integrated into an organized system and this system can be a coherent culture. Values and practices are intertwined and studies

suggest that practices are learned through socialization at the workplace after values are in place (Karahanna et al., 2006; Erez & Earley, 1993). This study posited that information privacy cultural values learned would lead to reducing tensions between the occupational communities. Therefore, it is hypothesized that,

> **H_6.** *Information privacy culture created among the different occupational communities within healthcare organization will have a positive impact in reducing job tensions.*

Collective information practice as defined by Dourish and Anderson (2006) refers to the collective understanding of the ways in which information should be shared, withheld, and managed. Without a coherent culture created, the different occupational communities in healthcare organizations may practice or adhere to information privacy differently and make it difficult for organizations to achieve HIPAA compliance. Wenger (1998) described practice as a process by which we can experience the world and our encounters with it as meaningful. Therefore, the different occupational communities' information privacy practice has to comply with the way in which healthcare organizations view patient information privacy concerns by implementing the cultural values in the form of specific information privacy compliance policies and procedures. Dourish and Anderson (2006) suggested that it is important to talk about privacy more broadly as information practice. It can be argued that establishing information practice through information privacy policies and procedures will lead to HIPAA compliance. Therefore, it is hypothesized that

H7. *Information privacy cultural values learned within the different occupational communities in healthcare organization will have a positive impact in collective HIPAA compliance practice.*

2.9.8 *Reduced Job Tension and Collective Information Practices*

Job tension result from an individual's feelings associated with perceived negative consequences of role perceptions (Lusch & Serpkenci, 1990). Healthcare organizations' decision to implement information privacy safeguards are unquestionable and at the same time creates tension between information privacy professionals and the patient care professionals. According to Symon, Long and Ellis (1996), conflicts within a clinical environment relate to social status, information practices, and adhering to formal norms. Establishing safeguards in harmony with the clinician's patient care procedures remains one of the challenges for healthcare organizations (Choi et al., 2006). Patient care can be impacted as clinicians try to follow policies and procedures implemented as result of governmental regulations such as HIPAA. One of the healthcare regulation requirements is to provide patients with portal access to their health records including their medication list. This is an obligation physician offices must comply with and patients misuse of the information could affect the quality of patient care (Breaux et al. 2004). As Peter Kilbridge, M. D. stated "some of the regulations seem excessively burdensome — such as requiring the tracking of every disclosure of information for uses beyond treatment, payment, and operations and recording the acknowledgment of receipt of an 8-to-20-page informational document that most patients will throw away without reading" (Kilbridge

2003, p. 1424). These challenges faced by clinicians have created negative perceptions about technology and the IT professionals (Adams & Blandford, 2005). The differences between clinicians' perceptions of the importance of information privacy in the organization creates adversarial relationship between clinicians and other occupational communities such as compliance professionals, information technology professionals, and the management team (Adams & Sasse, 2001). According to Choi (2006), before HIPAA, workflow was much smoother and more efficient than the newer workflow that involves locking doors and limiting computer access to avoid regulatory incompliance and penalties.

Establishing relationship between the occupational communities through coherent culture will reduce the tensions. Therefore, reduced job tension can be defined as an individual's feelings associated with perceived positive consequences of role perceptions. Wenger (1998) argued that work-based communities of practice can act as a bridge between employees and the organization through the day to day work practices. Work practices can be instrumental in developing a rich and varied social interaction among the different communities (Millen et al., 2002). According to Orlikawski (2002), practice is a recurrent, materially bounded and situated action engaged in a by members of a community. Agents who engage in practice pursue a collective interest and have the ability to succeed in a given effort at the same time able to differentiate themselves from people who are not in the same field (Levina & Vaast, 2005). For example, engineers and marketing have different fields of practice and the organizations that successfully engage engineers and marketing specialists to collectively practice will develop a knowledge-based competence in product development (Carlile, 2002; Dougherty, 1992). Creating

information privacy culture will have a direct impact on the information privacy practices that can develop into social and organizational norms (Schein, 1990). Therefore, this study argues that to address the tensions within the different occupational communities in healthcare organizations, collective information practice is needed. With clinicians feeling that their professional views will be protected through tolerance of diversity and the coherent cultural values, collective information privacy practice can be achieved. Therefore, this study hypothesized that,

H_8. *Reducing job tension within different communities in healthcare organizations will have a positive impact on collective HIPAA compliance practices.*

Chapter 3

Methodology

3.1. Research Design

Most of the studies on creation of culture have focused on qualitative methods or case studies and experiments to test their hypotheses (Cullum & Harton, 2007; Cullum, Okdie, & Harton, 2011). However, there are several quantitative studies that have successfully used surveys to conduct studies on creation of culture (Stewart & Gosain, 2006; Earley & Mosakowski, 2000; Sigler & Pearson, 2000; Karjaluoto, Mattila, & Pento, 2002). Bowen and Bourgeois (2001) surveyed university students from two resident halls to determine their personal comfort with LGBT and change in attitude toward LGBT based on their interaction with LGBT students in their halls.

This research conducted a web-based survey to study two selected healthcare organizations with one having exposed information privacy message to its' occupational communities and the other without exposing information privacy message to its employees to test the creation of coherent information privacy culture and collective information privacy practice. For example, organization "A" was a healthcare institution with a poor record on HIPAA compliance and did not exhibit coherent information privacy culture among the members of the different communities. On the other hand, organization "B" was an organization with a good HIPAA compliance records and did exhibit coherent information privacy culture among the members of the different communities.

As the central theme of this study, organization B showed that its information privacy culture emerged as a result of the social interaction and the exposure of message from the different occupational communities to support the dynamic social impact theory. There was also evidence of intentional communication of information privacy concerns as an issue of importance to the members of the different communities leading to the creation of the coherent information privacy culture. For example, organization B had initiated effort to communicate the importance of information privacy concerns to the different communities in the organization and showed evidence of its impact on their collective HIPAA compliance practice.

3.2. Sample Characteristics

The target population for this study was all of the employees of the healthcare organizations selected for this study. The hospitals be used in this research populations range from 600 to 1000 employees. Both hospitals are located in Chicago and have licensed beds of 180 to 300. One of the hospitals employ approximately 1400 staff in its network of hospitals but only one of the hospitals was targeted for this study. Employees are described as healthcare professionals which include both the clinical and the non-clinical employees. The clinical staff include physicians, nurses, laboratory technicians, radiology technicians, surgery technicians, patient care technicians (PCTs), and other clinicians. The non-clinical professionals include administration, medical records, patient billing, finance /accounting, housekeeping, case management, information systems, security, and other non-medical staff.

3.3. Sample Size

Selecting the appropriate sample size is important and it is encouraged to use statistical measurement to test for the right sample size (Bartlett, Kotrlik, & Higgins, 2001; Hall et al. 2001). Using the appropriate sample size ensures that Type I and Type II errors are not committed. Type I error is committed when the study falsely rejects the null hypothesis (H_0) and this happen when the sample size is too small to detect the effect of the phenomenon. On the other hand, Type II error may occur when the study falsely accepts the null hypothesis (H_0) when in fact, it should have been rejected. In an attempt to avoid committing either Type I or Type II errors, Cohen (1988) introduced the statistical power of a significant test to find the probability of correctly rejecting the null hypothesis. The probability of correctly rejecting the null hypothesis increases as the sample size of the study increases. According to Cohen, for a study to determine the appropriate sample size, three factors must be considered. The factors are the significant level or criterion (α), effect size (ES), and the desired power; and these factors have to be pre-determined.

The conventional statistical significant level usually used in most studies is alpha level of .05. Setting the alpha to a conventional level of .05 reduces the risk of falsely rejecting the null hypothesis and thereby increasing the validity of the test result. According to Ary, Jacobs, and Razavieh (1996), education research studies should use either alpha level of .05 to determine the sample size. It is also highly recommended to use alpha .05 for studies aiming to compare two independent means. This study compared two independent means and used the conventional alpha level of .05. Effect size is the next determining factor in collecting the appropriate sample size. According to

Cohen (1992), the effect size measures the degree to which the population feel about the existence of the phenomenon under study or the degree to which the null hypotheses will be assumed to be false. In other words, the effect size estimates the difference between the value set for the null hypothesis at the beginning of the study and the outcome value of the study. Every statistical test used in a study has its effect size index which is a continuous value starting from zero upward when the null hypothesis is true. Every effect size index is a unique value for measuring the difference between the null hypothesis H_0 and the alternate hypothesis H_1 (Cohen, 1992). Cohen introduced effect size conventions for small, medium, and large based on the statistical analyses employed in the study. For example, effect size index for multiple regression analysis will be set to f^2 = .02, .15, and .35 respectively; and for t-tests for two independent means, the standardized effect size will be set to d = .20, .50, and .80 for small, medium, and large respectively. However, Cohen cautioned against using the smaller effect size as it will be difficult to detect the effect and proposed using the medium effect size as it will "represent an effect likely to be visible to the naked eye of a careful observer" (p.156). The statistical power is the last factor needed to determine the sample size. The power of any statistical test can be defined as the likelihood that the study will reject the null hypothesis (Cohen, 1988). Statistical power is computed as 1- β, and the beta (β) is the probability of committing a Type II error when the null hypothesis is falsely accepted. The convention proposed by Cohen for most studies is setting the power at .80 with the beta set at (β = .20).

This study calculated its sample size by following Cohen's convention for the factors needed to calculate the appropriate sample size for general studies. Therefore, this

research aimed for effect size of d = .30 (medium), the alpha significance criterion of α = .05, and a statistical power of .80. Based on these pre-determined factors and following the power table for effect size, this study needed a sample size of 85 (Cohen, 1988). In other words, to obtain a statistically significant result, 85 or more respondents was desired in each of the selected organizations. The survey responses were examined to avoid common flaws in research when determining the right sample size and response bias (Wunsch, 1986).

3.4. Instrument Development

In order to analyze and understand the impact of the independent variables on the dependent variable, data was collected from the healthcare organizations selected for this study. The survey instrument was suitable to reach a broad spectrum of the sample population and the survey methodology had a high degree of external and predictive validity (Palvia, Leary, Mao, Midha, Pinjani, & Salam, 2004). Since the data collection approach in this study is a survey, the instrument was a web-based survey questionnaire developed by using Survey Monkey tool. The following steps was used in the instrument development process. The content of the questions was determined based on the objectives of the research and only questions that were relevant to the survey was included in the questionnaires. Even though, most of the items used in this research are existing items from the extant literature, some of the items are modified slightly to fit the context of the study as researchers are encouraged to add, delete, and or modify items for the appropriateness of the research (Churchill, 1979). New items were developed as needed and when there are no existing items; researchers have developed new items to

capture the objectives of their studies (Culnan & Armstrong, 1999; Dinev & Hart, 2006). Questions were constructed in an unambiguous way to enable all the participants to easily understand. The language used in the survey questions were developed to make sure the participants can understand. Response format guided the respondents to be consistent in their responses. For example, the response format ensured that participant could pick one and only one option.

With instrument reliability and validity in mind, the above process was tested to make sure that the instrument collected data that are relevant and credible to the study. If participants answer questions in a way that is more of a function of the instrument than the true score (Straub, 1989), the credibility of the study would be affected. The study ensured construct validity by using items from existing scales wherever possible. The study converted the items into sematic differential (0-10) to minimize common method bias.

3.5. Operationalization of Variables

3.5.1. *Measure of Exposure to Message (Issue Importance)*

Exposure to message or issue important was measured by the level of interaction between the different communities' in an organization. The extent to which information privacy awareness message is discussed, and the persuasion effort will enable the occupational communities to develop privacy attitude. This study derives its measurement items from (Price & Zaller, 1993; Visser et al. 2003). Price and Zaller (1993) measured the effects of exposure to political discussions and the media. The study

validated its five-item national television news scale by measuring the exposure and attention paid to national network news with 1989 Pilot Study score of (alpha = .80). The items were modified to fit the context of the present study. The measurement of the exposure to message as an issue importance variable include three questions adapted and modified slightly. The items are labeled EM1 – EM3.

3.5.2. *Measure of Information Privacy Belief*

The Information Privacy Belief construct was measured by assessing the strength of the shared beliefs in patient information privacy by the different occupational communities. This study adapted and modified the items slightly from Visser et al. (2003) which examined the relative strength of the change in the issue important to the participants after persuasive messages were delivered. The measuring of Information Privacy Belief (IPB) includes two items labeled IPB1 and IPB3. The items were validated with 5-point scales to measure the change of attitude over time and scales range from "Not at All" to "Extremely" with Cronbach alpha score of .92.

3.5.3. *Measure of Information Privacy Attitude*

Semantic differential scale has been used by several studies to assess attitude (Angst & Agarwal, 2009: Gallagher, 1974). In attitude clustering study, Visser and Mirabile, (2004) used a 5-point Likert scale to indicate the extent to which he or she agreed with this person's views regarding the U.S. involvement in Iraq with Cronbach .63; factor loadings .41–.59. Levitan and Visser (2009) study showed the social network

measures of political attitudes were highly accurate over 90% indicators of the actual attitudes of social network members. The Information Privacy Attitude (IPA) measure adapted the scale and items developed by (Taylor & Todd, 1995; Bhattacherjee, 2006). The items were modified to fit the context of this study and labeled IPA1 – IPA4.

3.5.4. *Measuring of Professional Issue Integration*

Professional Issues Integration (PII) was measured by the degree to which the occupational communities support other group's professional issues. This study adapted and modified the items from Feldman (1968) study that was used to examine the interpersonal integration or extent of reciprocal liking within a group. The Feldman (1968) study developed group integration index to measure the extent to which group members performed functions and specialized roles. The study used a 5-point scale to measure the level of individual liking in the group. The correlations for relationships among other groups showed a substantial positive (r = 51). The items in this study are labeled PII1 – PII3.

3.5.5. *Measure of Tolerance of Diversity*

This study measured the acceptance of professional differences from the communities in the organization. Tolerance of Diversity (TD) was adapted from Onyx and Bullen, (2000) modified to be relevant for this study and labeled TD1 – TD2. Valentine and Fliechman, (2002) used the scale developed by Onyx and Bullen, (2000) to measure professional tolerance of diversity. The study used 4-point Likert scale anchored

by 1 (no, not at all/no, not much) and 4 (yes, frequently/ yes, definitely). The coefficient alpha for the scale was 0.81.

3.5.6. *Measure of Information Privacy Culture*

Information Privacy Culture was measured through the content that has emerged from the formation of culture process with three indicators: values, beliefs, and attitude. Stone et al. (1983) 16 items and 7 points scale will be adapted and modified to measure the culture construct. Stone et al. (1983) 16 items were equally divided based on the concern for information privacy categorized as information collection, storage, usage, and release. Participant responded to the survey items on a 7-point (1 = strongly disagree to 7 = strongly agree) scales. The measure was validated based on degree of the score, the higher score on the values measure, the greater the value the individual places on exercising personal control over information about himself or herself. Information Privacy Culture content indicator items are labeled as IPC-V1 – IPC-V4 for values, IPC-B1 – IPC-B3 for beliefs, and IPC-A1 – IPC-A3 for attitude.

3.5.7. *Measure of Reduced Job Tension*

The Reduced Job Tension construct was measured using a scale developed by Kahn et al. (1964) and used by Lyons, (1971). Kahn et al. (1964) study measured job tension with three indicators, tension due to role overload (TRO) with two items, tension due to role ambiguity (TRA) with four items, and tension due to role conflict (TRC) with three items. Job tension has been found to be related to role ambiguity (Khan et al. 1964;

Seashore and Slesinger, 1964). On the other hand, role clarity is found to be positively linked to less job tension (Lyon, 1971). The items were measured on 5-point scales and the role clarity items had inter-correlations positive median of .36. The split-half reliability for the index was estimated to be .70. The items was modified to reflect the context of this study and the items are labeled as RJT1 – RJT4.

3.5.8. *Measure of Collective HIPAA Compliance Practice*

This study operationalizes Collective HIPAA Compliance Practice (CHCP) as the ability of the occupational communities to adhere to established information privacy policies and procedures. Goddard et al. (2000) assessed teachers' efficacy with a scale that was tested using a 10-item measure developed by Bandura (1997). The study found a correlation between collective efficacy and trust among colleagues was positive and significant ($r = .67$, $p < .001$). Oyserman, (1993) measured collectivism with seven-item, 5-point Likert-type scale and the score indicated ($M = 2.90$, $\alpha = .82$). This study will measure the Collective HIPAA Compliance Practice (dependent variable) with a 5-points scale and items adapted from (Oyserman, 1993; Goddard et al. 2000) and labeled CHCP1 – CHCP5.

Table 7

Measurement Instrument

Construct		Items	Adopted	Reference
Exposure to Message	EM1	How frequent is patient information privacy concerns or HIPAA policies and procedures communicated to you in your organization?	Yes	Visser et al. 2003
	EM2	How frequent is HIPAA compliance guidelines communicated to you in your organization?	Yes	Visser et al. 2003
	EM3	How often do you communicate with your co-workers about patient information privacy concerns or HIPAA compliance guidelines in your organization?	Yes	Price and Zaller 1993
Information Privacy Belief (IPB)	IPB1	The communication regarding HIPAA compliance in my organization has made me more aware of the patients' information privacy concerns.	Yes	Visser et al. 2003
	IPB2	I have a good understanding of patient information privacy concerns and patient's information privacy should be protected.	Yes	Visser et al. 2003
	IPB3	I have a good understanding of HIPAA compliance guidelines and the guidelines should be followed to protect patient information privacy.	Yes	Visser et al. 2003

Table 7

Measurement Instrument (continued)

Construct		Items	Adopted	Reference
Information Privacy Attitude (IPA)	IPA1	It is important for healthcare organizations to take more steps to make sure that the patient personal information in their computerized files is accurate.	Yes	Taylor and Todd, 1995
	IPA2	It is important for healthcare organizations to ensure that unauthorized people cannot access patients' personal information in their computers.	Yes	Taylor and Todd, 1995
	IPA3	As an employee, it is important to protect patients' information privacy.	Yes	Bharttacherjee, 2006
	IPA4	I 'm confident that protecting patients' information privacy will contribute to achieving HIPAA compliance in my organization.	Yes	Bhattacherjee, 2006
Professional Issue Integration (PII)	PII1	Professionals in your organization support other professions viewpoints or opinions.	Yes	Feldman, 1968
	PII2	Professionals in your organization respect and value the roles of other professions.	Yes	Feldman, 1968
	PII3	Professionals in your organization accept and share responsibilities with other professions.	Yes	Feldman, 1968
Tolerance of Diversity (TD)	TD1	The different professionals involved in HIPAA compliance makes it easier for you?	Yes	Onyx and Bullen, 2000
	TD2	I do enjoy working with different professionals to achieve HIPAA compliance?	Yes	Onyx and Bullen, 2000

Table 7

Measurement Instrument (continued)

Construct		Items	Adopted	Reference
Information Privacy Culture (IPC)	IPC-V1	Healthcare organizations should not be allowed to collect patients' personal information without their permission.	Yes	Stone et al. 1983
	IPC-V2	The amounts and types of patients' personal information stored by various organizations without their permissions should be limited.	Yes	Stone et al. 1983
	IPC-V3	The uses organizations make of patients' personal information without their permissions should be strictly limited.	Yes	Stone et al. 1983
	IPC-V4	Healthcare organizations that collect and store patients' personal information should not have the right to release this information to other organizations without permission.	Yes	Stone et al. 1983
	IPC-B1	I feel that healthcare organizations should do more to address patients' fear of losing control over their health records.	Yes	Stone et al. 1983
	IPC-B2	I feel that employees are not able to control the uses that organization make of patients' personal information.	Yes	Stone et al. 1983
	IPC-B3	It bothers me that once patients have given their personal information to an organization, they have no way to control the future release of that information.	Yes	Stone et al. 1983
	IPC-A1	I 'm pleased with my ability to keep organizations from collecting patients' personal information that patients would like to keep secret.	Yes	Stone et al. 1983
	IPC-A2	I'm concern about the fact that many organizations are storing patients' personal information in computerized files without their permission.	Yes	Stone et al. 1983
	IPC-A3	I'm highly satisfied with my ability to keep my organization from releasing patients' personal information to other organizations without their permission.	Yes	Stone et al. 1983

Table 7

Measurement Instrument (continued)

Construct		Items	Adopted	Reference
Reduced Job Tension (RJT)	RJT1	How clear are you about your role in safeguarding patient privacy?	Yes	Lyon, 1971
	RJT2	Do you feel you are always as clear as you would like to be about what to do to ensure HIPAA compliance?	Yes	Lyon, 1971
	RJT3	Do you feel you are always as clear as you would like to be about what you have to do to protect patient privacy?	Yes	Lyon, 1971
	RJT4	In general, how clearly defined are the policies and procedures and HIPAA guidelines of the hospital that affect your job?	Yes	Lyon, 1971
Collective HIPAA Compliance Practice (CHCP)	CHCP1	Professionals in this organization will continue to protect patient privacy.	Yes	Oyserman, 1993
	CHCP2	Professionals in this organization are well-prepared to ensure HIPAA compliance.	Yes	Goddard et al. 2000
	CHCP3	Professionals in this organization are committed to observing HIPAA guidelines.	Yes	Goddard et al. 2000
	CHCP4	Professionals in this organization are committed to observing HIPAA procedures.	Yes	Goddard et al. 2000
	CHCP5	Professionals in this organization will continue to safeguard patient privacy.	Yes	Oyserman, 199

3.6. Pilot Study

A pilot study was conducted from the employees the selected organizations to test the measurement instrument. The survey monkey uniform resource locator (url) or link

was sent to participants through email and text messages and the responses were received within a week. According to Straub, pilot studies are necessary because they provide a testing ground and dry run for the use of the research instrument during the actual study. Teijlingen and Hundley (2002) indicated that "pilot studies are a crucial element of a good study design. Conducting a pilot study does not guarantee success in the main study, but it does increase the likelihood" (p. 33).

This study used 35 employees from the two selected healthcare organizations and the pilot sample size is consistent with the extant literature. Dinev, Xu, and Smith et al. (2009) used 51 undergraduate students in its pilot study to assess the clarity of its survey instructions and made revisions to the measurement instrument. Johnston and Warkentin (2010) validated their research instrument by conducting a pilot test with 12 employees from different healthcare organizations. The result was used to revise their instrument and the final 22 items were used in their study. Following the recommendations from the latent literature, this research collected the appropriate sample size to validate the instrument and resolve any issues that was detected. Smith et al. (1996) used 15 students and faculty members in their pilot study to refine the instrument in measuring information privacy concerns. The result in this pilot study was used to make the necessary changes to the survey instrument. Some of the items used in this study were modified from existing studies; and latent literature recommends a pilot study to fine tune the research instrument (Straub, 1989).

3.7. Validity and Reliability

This study tested the validity and reliability of the survey instrument by employing the techniques appropriate to the context of the study. Validity and reliability of the measurement instrument help the researcher to obtain statistical significance and draw meaningful conclusions about the phenomenon under study (Omrod & Leedy, 2005).

Validity is defined as the process ensuring that survey accurately measures what it is supposed to measure. Straub, Boudreau, and Gefen, (2004) stressed on the importance of validating research instruments. Sekaran, (2003) grouped the validity test into the following categories, content validity, criterion validity, and construct validity. Content validity makes certain to obtain adequate and representative set of items that measure the concept. For the instrument to be valid in content, it has to draw its representative questions from unlimited number of possible questions and has to be evaluated by expert in the field several times to reach agreement of the instrument content validity (Straub, 1989). However, content validation is subjective and empirical assessment is not mandatory and content validity is difficult to obtain.

Criterion validity seeks to measure the correlation of survey test result with a previously validated instrument and this can be achieved when concurrent validity or predictive validity is established. Construct validity ensures that the results obtain from the measurement fit the underlying theory of the study and for which the test is designed. According to Straub, Boudreau, and Gefen, (2004) construct validity "raises the basic question of whether the measures chosen by the researcher fit together in such a way as to capture the essence of the construct" (p. 15). Construct validity may not be directly

assessed but the measure can be inferred to be valid "to the degree that it assesses the magnitude and direction of a representative sample the characteristics of the construct and to the degree that the measure is not contaminated with elements from the domain of other constructs or error" (Peter, 1981, p. 134). Straub (1989) indicated concerns about researchers' over reliance on previously validated instruments but suggested that "researchers should use previously validated instruments wherever possible, being careful not to make significant alterations in the validated instrument without revalidating the instrument content, constructs, and reliability" (p. 161). As a result, this research carefully used existing and validated items, and modified appropriately to fit the context of the study.

Reliability is defined as a test being able measure what it is supposed to measure consistently (Carmines, 1980). According to Straub (1989), for an instrument and items to be reliable, respondents must answer the questions or close to the same way, every time the questions are asked. As the goal of reliability measurement is to make sure the instrument items accurately assess a given construct, researchers identified five techniques to assess the reliability (Carmines, 1980; Straub, 1989). The techniques are internal consistency, split-halves, test-retest, alternative forms, and interrater reliability. However, Boudreau et al. (2001) found that majority of researchers (63%) used Cronbach alpha to test their instrument reliability. To be consistent, the instrument in this research reliability will be examined by using Cronbach alpha to calculate the reliability coefficient. Normal alpha values range between 0.00 and 1.00 and the closer the Cronbach's alpha coefficient is to 1.00 the items in scale will show greater consistency

(Gearge & Mallery, 2003). Research shows that alpha coefficient values above 0.70 are considered ideal (Gearge & Mallery, 2003).

3.8. Data Collection

The data for this study was collected using Survey Monkey and the survey was administered to the two healthcare organizations selected for this study. The survey had 39 questions (Appendix A) and the participants took an average time of nine minutes to complete. The SurveyMonkey web url or link and the Internal Review Board (IRB) participant consent letter were emailed to the participants. The consent letter explained the purpose, no anticipated or minimal risks, and the benefits of the study to the participants. The survey was sent to personal contacts in the two organizations and the initial contacts recruited more employees to participate in the study. Some department managers were able to get most of their staff to participate in the study and were rewarded with pizza lunch.

The data collected from both organizations were expected to show the presence of coherent information privacy culture created through the DSIT process. The assumption was that since organization B has created the environment to communicate information privacy concerns as an issue of importance to the different communities, coherent information privacy culture would be exhibited leading to high level of collective information privacy compliance practice. The unit of analysis for this study include the individual employees from the different occupational communities (Physicians, nurses, IT, Technicians, Administration, etc.) in the selected healthcare organizations. Unit of

analysis refers to the entity you collect data about and analyze to draw conclusions (Gratton and Jones, 2010).

3.9. Data Analysis

Survey data was analyzed using SPSS to assess the associations of the proposed constructs. Each construct was measured using rigorously validated and modified to relate specifically to the context of the study. As suggested by Gefen et al. (2000), reliability and validation for the measures was established through examining Cronbach alpha coefficient for each construct. The discriminant and convergent validity were examined through exploratory component factor analysis.

After assessing reliability and validity of the instrument, the research questions and hypothesis was tested using multiple regression analysis. Cohen (1988) suggested that multiple regression analysis is a useful analytical tool to use when measuring the relationship between multiple independent variables and a single dependent variable. This research further examined the difference between the two healthcare organizations selected for collective HIPAA compliance practices and the *t*-test was conducted. The independent samples *t*-test was a useful statistical test when the purpose of the research was to assess if differences exist between two independent samples (Gerald, 2018). The null hypothesis (*Ho*) was expected be rejected if there is no significant difference. The study assumed that normality and homogeneity of variance was assessed. Normality scores are usually distributed with a "bell-shaped" and homogeneity of variance was

assessed on both groups for Equality of Error Variances. The research conducted two-tailed *t*-test with the probability of rejecting the null hypothesis when it is true set at $p < 0.05$. This created 95% certainty to ensure that the differences did not happen by chance. Descriptive statistics was used for the seven independent variables.

3.10. Required Resources

The following resources were needed to make the research successful:

1. Personal computer and the necessary software
2. Access to organization for data collection
3. Providing incentives to participants to sustain participation
4. Survey Monkey account for pretest and posttest survey
5. Survey instrument development
6. SPSS analytical software for factor analysis
7. SPSs software for multiple linear regression analysis.
8. IRB approval was obtained to use human subjects in the study.

3.11. Summary

Chapter 3 covers the research methodology of this study and it was intended to capture the goal of this study. The ultimate goal of this study was to examine how the

creation on information privacy culture could lead to collective HIPAA compliance practice by the different occupational communities in the healthcare organizations. To accomplish this objective, the research design was set up to answer the following questions:

1. Can a coherent information privacy culture be created from the different occupational communities?

2. Does the creation of coherent information privacy culture lead to collective HIPAA compliance practice?

The sample population section describes the size and characteristics of the sample to be used in this study. The sample size was calculated using Cochran alpha level and it is estimated to be 85 for the two organizations selected for the study. The sample characteristics include all the employees in both organizations with the occupational communities such as physicians, nurses, information systems, technicians, administration, etc. The data collection section describes the survey and questionnaire used and the study utilized web-based Survey Monkey application. The survey instrument was developed and validated for the result of the research to be reliable. Data analysis was performed; multiple regressions were used to test the relationships between the independent and dependent variables, and *t*-test ws used to compare the significance differences between the two organizations.

Chapter 4

Results

4.1. Introduction

The purpose of this study was to investigate how the creation of a coherent information privacy culture will influence information privacy practices thereby helping healthcare organization to achieve collective HIPAA compliance practice. In this chapter, the findings of the data analyses will be presented. Descriptive statistics for the sample are first presented. Cronbach alpha for the scales is also presented. To address the hypotheses, a series of linear regressions were conducted to examine the predictive relationships. A series of independent sample *t*-tests were conducted to assess differences in the scales between the hospitals. The level of significance for the inferential analyses was evaluated at the generally accepted level, $\alpha = .05$.

4.2. Descriptive Statistics

A total of 98 participants were included in Hospital A, and 83 participants were included in Hospital B. Gender was distributed between 86 females, 88 males, and 7 no response. Age was distributed among a several possibilities ranging from 20 years and under to 61 years and older. Experience at current position also ranged from several possibilities ranging from one year and under to 10 years and over. Frequencies and percentages of the demographics are presented in Table 8.

Table 8

Frequency Table for Demographics

Variable	*n*	*%*
Gender		
Female	86	47.5
Male	88	48.6
No response	7	3.9
Age		
20 years and under	1	0.6
21-30 years	37	20.4
31-40 years	58	32.0
41-20 years	29	16.0
51-60 years	32	17.7
61 years and older	17	9.4
No response	7	3.9
Years worked at current organization		
One year and under	30	16.6
2-3 years	32	17.7
4-5 years	38	21.0
6-7 years	16	8.8
8-9 years	19	10.5
10 years and over	39	21.5
No response	7	3.9

Note. Due to rounding errors, percentages may not equal 100%.

Table 9 presents the descriptive statistics for the continuous level variables.

Table 9

Descriptive Statistics for Continuous Variables by Hospital

Variable	Hospital A			Hospital B		
	n	*M*	*SD*	*n*	*M*	*SD*
Exposure to Message	98	4.32	0.72	83	4.32	0.68
Information Privacy Beliefs	98	4.47	0.80	83	4.49	0.50
Information Privacy Attitudes	98	4.71	0.63	83	4.56	0.81
Professional Issue Integration	98	4.13	0.66	83	4.35	0.93
Tolerance of Diversity	98	4.47	0.48	83	4.45	0.51
Information Privacy Culture	98	4.35	0.85	83	4.48	0.73
Reduced Job Tension	98	4.37	0.58	83	4.46	0.53
Collective HIPAA Compliance Practice	98	4.46	0.46	83	4.67	0.61

4.3. Reliability

The Cronbach alpha for the scales was examined to identify the internal consistency. The findings of the scales met the acceptable threshold ($\alpha \geq .70$). Table 10 presents the Cronbach alpha for the scales.

Table 10

Cronbach Alpha for Scales by Hospital

Variable	Number of Items	Hospital A	Hospital B
		α	α
Exposure to Message	2	.796	.871
Information Privacy Beliefs	1	.709	.716
Information Privacy Attitudes	4	.943	.877
Professional Issue Integration	3	.858	.968
Tolerance of Diversity	2	.886	.788
Information Privacy Culture	4	.906	.875
Reduced job tension	3	.915	.907
Collective HIPAA Compliance Practice	5	.863	.923

4.4. Validity

To test for common method bias, Harman's single factor test was performed. Specifically, an exploratory factor analysis was conducted with all survey items corresponding to the study variables while forcing a 1-factor unrotated solution. Podsakoff and Organ (1986) suggested that there is marked common method bias if the 1-factor solution explains more than 50% of the variance in the data. The results of the test showed that the proportion of variance explained by the 1-factor was 38.15%, indicating that common method bias did not have a marked effect on the data.

To test for convergent and discriminant validity, a Principal Component Analysis (PCA) was conducted with a varimax rotation (Trochim & Donnelly, 2008). The Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO), with all survey items included, was .837, suggesting that the data is likely to factor appropriately (Rovai et al., 2014).

Table 11

Rotated Component Matrix (all items included)

	Component							
	1	2	3	4	5	6	7	8
IPA2	.871	.149	.214	.036	.139	.232	.155	-.026
IPA3	.861	.238	.094	.256	.045	.109	.144	-.034
IPA1	.732	.277	-.055	.253	.111	.081	.007	.180
IPA4	.670	.284	.172	.409	-.010	-.090	.141	.058
IPB2	.662	.311	.259	-.035	.345	-.014	.249	.101
IPC_V1	.612	.212	-.108	.508	.090	.134	.319	.262
CHCP3	.317	.779	.219	.073	.223	.089	-.032	-.108
CHCP4	.138	.757	.202	.181	.213	-.102	-.082	.175
CHCP5	.358	.753	.113	.176	.028	.020	.214	.081
CHCP1	.428	.735	.144	.120	-.048	.063	.338	.076
CHCP2	.101	.723	.195	.026	-.016	.045	.371	.013
RJT1	.043	.259	.785	.110	.256	-.055	.257	.068
RJT4	.209	.284	.684	-.063	.341	.144	-.060	.066
RJT2	.141	.360	.681	.143	.137	.067	.288	.250
RJT3	-.058	.305	.670	.439	.130	.025	.120	.288
IPC_A1	.228	-.083	.571	-.172	.203	.351	-.046	.408
IPC_V3	.123	.064	.162	.892	.091	.156	.077	.047
IPC_V2	.248	.127	.044	.803	.052	.173	.284	-.125
IPC_V4	.410	.149	.016	.736	.026	.193	-.122	.213
IPC_B1	.484	.231	-.134	.538	-.087	.354	.022	.263
EM2	-.032	.056	.265	.032	.868	.102	-.052	.131
EM1	.176	.143	.108	.141	.791	.188	.292	.011
IPB3	.387	.081	.463	-.213	.545	.075	-.011	-.064
IPB1	.430	.089	.311	.252	.540	-.144	.113	.098
IPC_B3	-.032	-.063	.258	.278	.062	.814	-.026	-.005
IPC_B2	.071	.119	-.169	.059	.017	.763	.256	.174
IPC_A2	.321	-.010	.107	.176	.222	.728	.102	-.061
PII3	.281	.421	.255	.132	.038	.242	.641	.130
PII2	.495	.226	.212	.170	.155	.267	.623	.027
PII1	.487	.341	.133	.173	.070	.338	.540	.036
TD2	.327	.208	.461	.235	.245	.053	.476	.220
IPC_A3	.183	.072	.364	.145	-.062	.025	.225	.774
EM3	.010	.090	.173	.057	.538	.134	-.109	.687
TD1	.007	.140	.411	.420	.178	-.043	.354	.429

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.[a]
a. Rotation converged in 22 iterations.

The findings of the PCA and the rotated matrix showed that most of the factor loadings did not group into the hypothesized constructs and the individual items were also strongly correlated to other constructs. Table 11 presents the Rotated Component Matrix with all the items.

Following Tateneni et al.'s (2001) procedure and conducting further factor analysis, convergent and discriminant validity were further assessed and improved by identifying and removing some of the items that loaded on more than one factor. At each step, the item which violated these requirements of discriminant and convergent validity to the greatest extent was removed (Raubenheimer, 2004). The final PCA results and the Rotated Component Matrix indicated that there were high factor loadings for the survey items and most of the factor loadings did group into their hypothesized constructs. However, Factor 8 has only one item because EM1 (.706) and EM2 (.890) cross-loaded to Factor 5. In addition, IPB2 cross-loaded to Factor 1 (.649) instead of aligning itself with Factor 5 as the rest of the IPB items. Finally, IPC_V1 cross-loaded to Factor 1 (.589) and also aligned itself with Factor 4 with the rest of the IPC_V items. Although these items did not align perfectly, the study decided to retain the items for the final data analysis without further reduction of the number items to measure the variables. Table 12 shows that the remaining items are now grouped into their intended constructs.

Table 12

Rotated Component Matrix (6 items removed)

	Component							
	1	2	3	4	5	6	7	8
IPA3	.852	.211	.079	.263	.109	.239	-.007	-.077
IPA 2	.842	.122	.140	.083	.228	.308	-.035	-.068
IPA 1	.755	.252	-.002	.235	.057	.099	.034	.271
IPA 4	.665	.306	.153	.400	.042	.089	.190	-.146
IPB2	**.649**	.290	.215	-.083	.363	.279	.175	.130
IPC_V1	**.589**	.185	-.035	**.508**	-.005	.388	.177	.272
CHCP4	.123	.811	.139	.165	.231	-.065	.262	.045
CHCP3	.315	.758	.184	.065	.256	.114	-.004	-.032
CHCP5	.366	.721	.172	.126	-.018	.278	.139	.062
CHCP1	.416	.688	.243	.101	-.080	.420	.013	.085
CHCP2	.047	.680	.301	.055	-.004	.442	-.099	-.034
RJT1	.084	.175	.837	.035	.272	.179	.186	-.023
RJT 2	.185	.256	.791	.095	.133	.273	.166	.140
RJT 3	-.003	.242	.772	.368	.134	.051	.234	.163
RJT 4	.199	.224	.645	-.049	.485	.074	-.095	.069
IPC _V3	.111	.064	.187	.913	.070	.094	.113	.033
IPC _V2	.200	.125	.027	.833	.059	.326	.080	-.142
IPC _V4	.431	.128	.081	.738	-.019	-.017	.068	.265
EM2	-.064	.054	.177	.085	**.890**	.019	.072	.213
IPB3	.324	.114	.225	-.201	.718	.064	.113	-.069
EM1	.118	.092	.125	.195	**.706**	.423	-.074	.290
IPB1	.398	.128	.237	.251	.605	.001	.278	-.182
PII2	.456	.128	.245	.181	.150	.733	.108	.050
PII1	.412	.284	.102	.237	.147	.706	.073	-.060
PII3	.236	.358	.247	.159	.086	.692	.274	-.081
TD1	.033	.148	.366	.280	.122	.181	.755	.195
TD2	.317	.189	.371	.142	.252	.421	.547	.068
EM3	.075	.020	.308	.076	.410	-.059	.211	.712

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 9 iterations.

The correlation matrix produced by the PCA reveals that items for each construct is highly correlated, supporting convergent validity (Trochim & Donnelly, 2008). In addition, the correlation matrix reveals that the items for each construct are not highly correlated with items from other constructs, supporting discriminant validity. After removing items to improve validity, Cronbach's alpha was assessed for the internal consistency and reliability. The findings of all the scales met the acceptable threshold ($\alpha \geq .70$). Table 13 details the results of Cronbach's alpha and the item-total item correlation ranges.

Table 13
Reliability and Factor Loadings

Variable	Number of Items	Cronbach Alpha	Factor loading range	Item-Total Correlation Range
		α		
Exposure to Message	3	.828	.783-.917	.792-.905
Information Privacy Beliefs	3	.831	.799-.881	.806-.894
Information Privacy Attitudes	4	.901	.625-.841	.848-.951
Professional Issue Integration	3	.926	.737-.771	.912-.957
Tolerance of Diversity	2	.837	.528-.732	.921-.935
Information Privacy Culture	4	.892	.623-.898	.818-.894
Reduced Job Tension	4	.914	.792-.921	.805-.916
Collective HIPAA Compliance Practice	5	901	.647-.829	.769-.928

4.5. Detailed Analysis of Assumptions

A series of linear regressions were conducted to examine the predictive relationships between the variables. A linear regression is an appropriate analysis when assessing the predictive relationship between a predictor variable and a continuous criterion variable (Tabachnick & Fidell, 2013). Prior to analysis, the assumptions of normality and homoscedasticity were tested for each regression.

4.5.1 *Normality*

The assumption of normality was assessed by plotting the quantiles of the model residuals against the quantiles of a Chi-square distribution, which is also called a P-P scatterplot (DeCarlo, 1997). For the assumption of normality to be met, the data must not deviate greatly from the normality trend line. The assumption was met because the data in each scatterplot closely followed the trend line (see Figures 5-8).

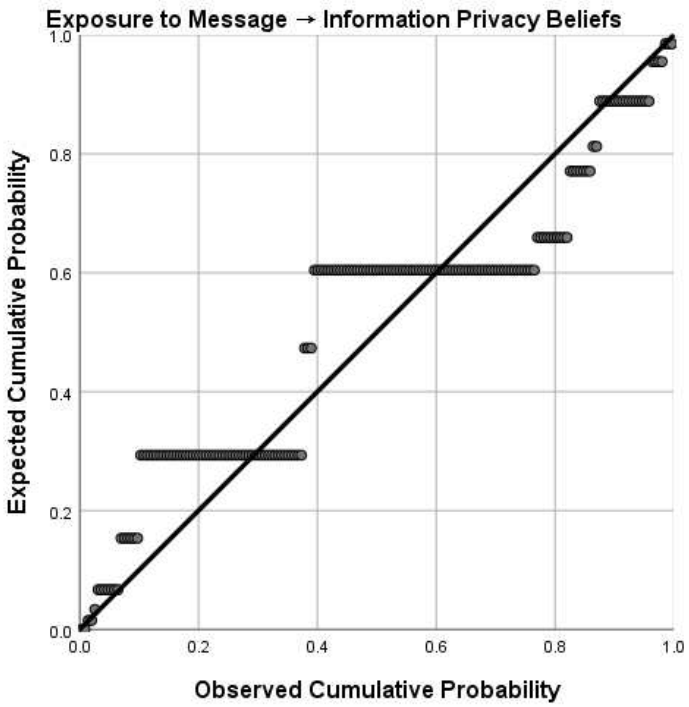


Figure 5. Normal P-P Scatterplot for Relationship between Exposure to Message and Information Privacy Beliefs.

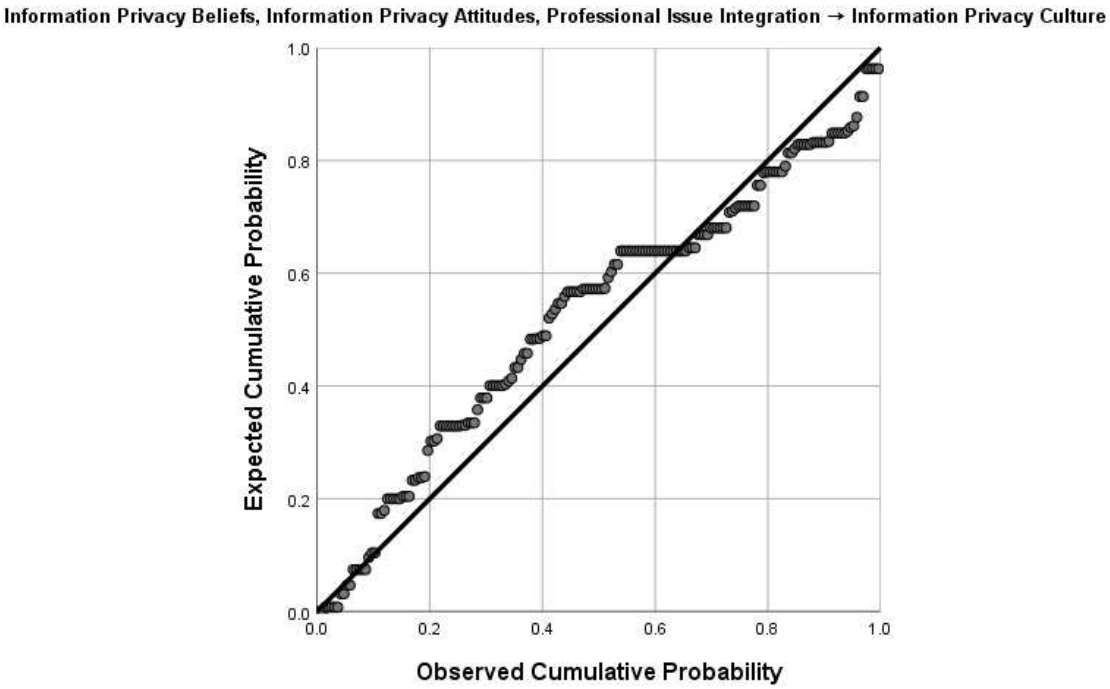


Figure 6. Normal P-P Scatterplot for Relationship between Information Privacy Beliefs, Information Privacy Attitudes, Professional Issue Integration, and Information Privacy

Culture.

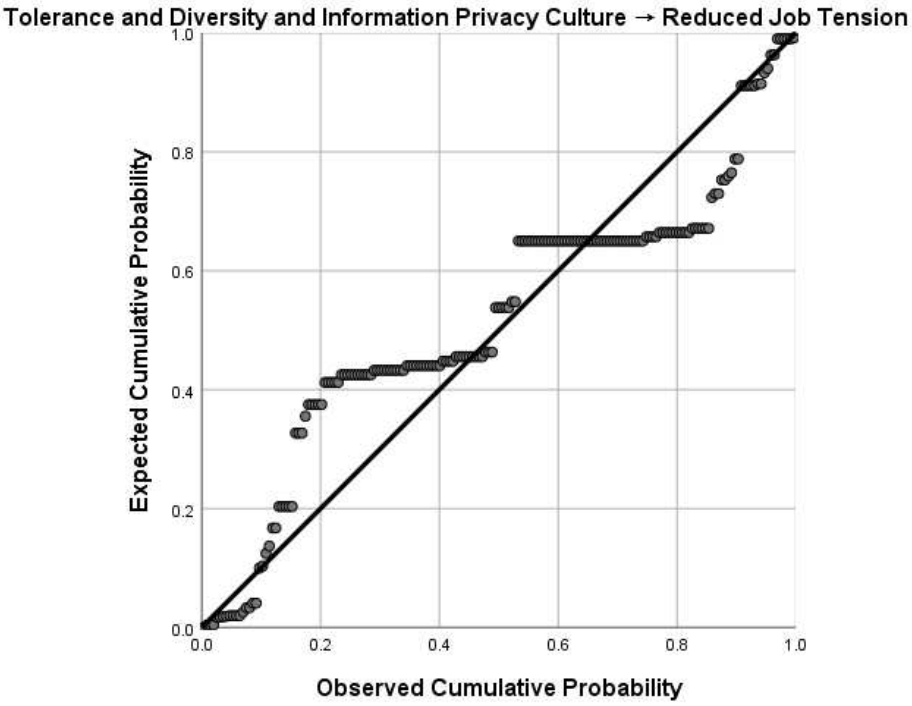


Figure 7. Normal P-P Scatterplot for Relationship between Tolerance and Diversity, Information Privacy Culture, and Reduced Job Tension.

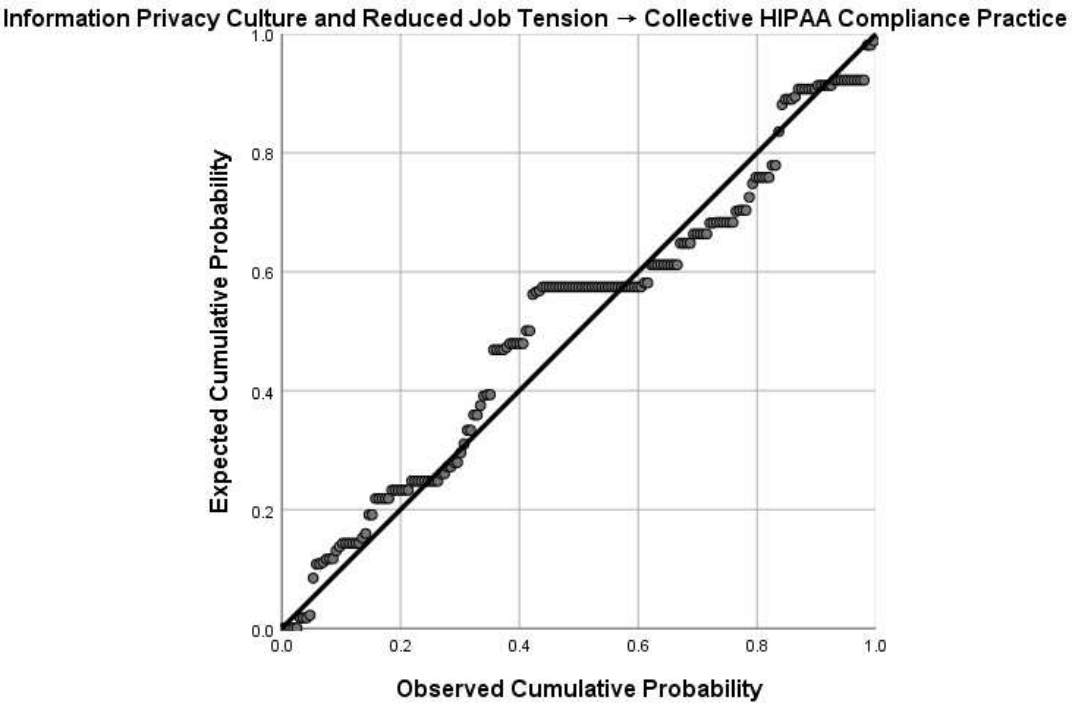


Figure 8. Normal P-P Scatterplot for Relationship between Information Privacy Culture, Reduced Job Tension, and Collective HIPAA Compliance Practice.

4.5.2. *Homoscedasticity*

Homoscedasticity was evaluated by plotting the residuals against the predicted values (Bates et al., 2014; Field, 2013). The assumption of homoscedasticity is met if the data points appear randomly distributed about the scatterplot with no apparent curvature. The assumption was met due to random scatter in each of the residual's scatterplots (see Appendix E).

4.6. Hypotheses Testing

Multiple linear regression analysis was used to test the relationships between the variables and determine the fitness of the research model. The contributions of the various independent variables to the explained variance were examined.

H_1: Exposure to Message → Information Privacy Beliefs

The findings of the linear regression were statistically significant, $F(1, 177) = 106.848$, $p < .001$, and $R^2 = .376$, suggesting that there was a significant predictive relationship between Exposure to Message and Information Privacy Beliefs. Exposure to Message explained 37.6% of the variance in Information Privacy Beliefs. With every one-unit increase in Exposure to Message ($B = 0.549$, $t = 10.337$, $p < .001$), Information Privacy Beliefs scores increased by 0.549 units. Therefore, hypothesis one (H_1) was supported. Table 14 presents the findings of the linear regression between Exposure to Message and Information Privacy Beliefs.

Table 14

Results for Linear Regression with Exposure to Message Predicting Information Privacy Beliefs

Predictor	*B*	SE	β	*t*	*p*
Exposure to Message	.549	.053	.614	10.337	<.001

Note. $F(1, 177) = 106.848$, $p < .001$, $R^2 = .376$

H_2: Information Privacy Beliefs → Information Privacy Culture

H_3: Information Privacy Attitude → Information Privacy Culture

H_4: Professional Issue Integration → Information Privacy Culture

The findings of the multiple linear regression were statistically significant, $F(3, 175) = 50.263$, $p < .001$, and $R^2 = .463$, suggesting that there was a significant predictive relationship between Information Privacy Beliefs, Information Privacy Attitudes, Professional Issue Integration, and Information Privacy Culture. Information Privacy Beliefs, Information Privacy Attitudes, and Professional Issue Integration explained 46.3% of the variance in Information Privacy Culture. With every one-unit increase in Information Privacy Beliefs ($B = 0.-345$, $t = -2.513$, $p = .013$), Information Privacy Culture scores decreased by 0.345 units. With every one-unit increase in Information Privacy Attitudes ($B = 0.635$, $t = 6.686$, $p < .001$), Information Privacy Culture scores increased by 0.635 units. With every one-unit increase in Professional Issue Integration ($B = 0.402$, $t = 3.916$, $p < .001$), Information Privacy Culture scores increased by 0.21 units. Therefore, hypothesis two (H_2), three (H_3), and four (H_4) were supported. Table 15 presents the findings of the linear regression between Information Privacy Beliefs,

Information Privacy Attitudes, Professional Issue Integration, and Information Privacy Culture.

Table 15
Results for Linear Regression with Information Privacy Beliefs, Information Privacy Attitudes, and Professional Issue Integration Predicting Information Privacy Culture

Predictor	*B*	SE	β	*t*	*p*
Information Privacy Beliefs	-.345	.137	-.190	-2.513	.013
Information Privacy Attitudes	.635	.095	.562	6.686	<.001
Professional Issue Integration	.402	.103	.299	3.916	<.001

Note. $F(3, 175) = 50.263$, $p < .001$, and $R^2 = .463$

H_5: Tolerance of Diversity → Reduced Job Tension

H_6: Information Privacy Culture → Reduced Job Tension

The findings of the multiple linear regression were statistically significant, $F(2, 176) = 55.775$, $p < .001$, and $R^2 = .388$, suggesting that there was a significant predictive relationship between Tolerance of Diversity, Information Privacy Culture, and Reduced Job Tension. Tolerance of Diversity and Information Privacy Culture explained 38.8% of the variance in Reduced Job Tension. With every one-unit increase in Tolerance of Diversity ($B = 1.392$, $t = 9.102$, $p < .001$), Reduced Job Tension scores increased by 1.392 units. Therefore, hypothesis five (H_5) was supported. Information Privacy Culture was not a significant predictor in the regression model. Therefore, hypothesis six (H_6) was not supported. Table 16 presents the findings of the linear regression between Tolerance of Diversity, Information Privacy Culture, and Reduced Job Tension.

Table 16
Results for Linear Regression with Tolerance of Diversity and Information Privacy Culture Predicting Reduced Job Tension

Predictor	*B*	SE	β	*t*	*p*
Tolerance of Diversity	1.392	.153	.625	9.102	<.001
Information Privacy Culture	-.003	0.046	.004	.064	.949

Note. $F(2, 176) = 55.775$, $p < .001$, and $R^2 = .388$

H_7: Information Privacy Culture → Collective HIPAA Compliance Practice

H_8: Reduced Job Tension → Collective HIPAA Compliance Practice

The findings of the multiple linear regression were statistically significant, $F(2, 176) = 55.036$, $p < .001$, and $R^2 = .385$, suggesting that there was a significant predictive relationship between Information Privacy Culture, Reduced Job Tension, and Collective HIPAA Compliance Practice. Information Privacy Culture and Reduced Job Tension explained 38.5% of the variance in Collective HIPAA Compliance Practice. With every one-unit increase in Information Privacy Culture ($B = 0.247$, $t = 4.732$, $p < .001$), Collective HIPAA Compliance Practice scores increased by 0.247 units. With every one-unit increase in Reduced Job Tension ($B = 0.575$, $t = 7.389$, $p < .001$), Collective HIPAA Compliance Practice scores increased by 0.575 units. Therefore, hypothesis six (H7) and seven (H_8) were supported. Table 17 presents the findings of the linear regression between Information Privacy Culture, Reduced Job Tension, and Collective HIPAA Compliance Practice.

Table 17

Results for Linear Regression with Information Privacy Culture and Reduced Job Tension Predicting Collective HIPAA Compliance Practice

Predictor	*B*	SE	β	*t*	*p*
Information Privacy Culture	.247	.52	.295	4.732	<.001
Reduced Job Tension	.575	.78	.460	7.389	<.001

Note. $F(2, 178) = 49.98$, $p < .001$, $R^2 = .360$

The results of the hypotheses testing showed that seven of the eight hypotheses were supported and one was not supported. Table 18 shows the summary of the results from the hypotheses testing.

Table 18

Hypothesis Testing Summary

Hypothesis	Finding	Direction
H_1: Exposure to Message → Information Privacy Beliefs	Supported	Positive
H_2: Information Privacy Beliefs → Information Privacy Culture	Supported	Positive
H_3: Information Privacy Attitude → Information Privacy Culture	Supported	Positive
H_4: Professional Issue Integration → Information Privacy Culture	Supported	Positive
H_5: Tolerance of Diversity → Reduced Job Tension	Supported	Positive
H_6: Information Privacy Culture → Reduced Job Tension	Not supported	-
H_7: Information Privacy Culture → Collective HIPAA Compliance Practice	Supported	Positive
H_8: Reduced Job Tension → Collective HIPAA Compliance Practice	Supported	Positive

4.7. Independent Sample *t*-Tests

A series of independent sample *t*-tests were conducted to examine for differences in the scales by hospital. Results of the independent sample *t*-test for Collective HIPAA Compliance Practice by Hospital were statistically significant, $t = -2.61$, $p = .010$. Hospital B ($M = 4.67$) scored significantly higher in Collective HIPAA Compliance Practice than Hospital A ($M = 4.46$). No other significant differences were found by examination of the independent sample *t*-tests. Table 19 presents the findings of the independent sample *t*-tests for the scales by hospital.

Table 19

Independent Sample t-Tests for Scales by Hospital

Dependent Variable	Hospital A			Hospital B			*t*	*p*
	n	*M*	*SD*	*n*	*M*	*SD*		
Exposure to Message	98	4.32	0.72	83	4.32	0.68	-0.03	.977
Information Privacy Beliefs	98	4.47	0.80	83	4.49	0.50	-0.24	.809
Information Privacy Attitudes	98	4.71	0.63	83	4.56	0.81	1.39	.165
Professional Issue Integration	98	4.13	0.66	83	4.35	0.93	-1.85	.066
Tolerance of Diversity	98	4.47	0.48	83	4.45	0.51	0.32	.747
Information Privacy Culture	98	4.35	0.85	83	4.48	0.73	-1.07	.286
Reduced Job Tension	98	4.37	0.58	83	4.46	0.53	-1.05	.295
Collective HIPAA Compliance Practice	98	4.46	0.46	83	4.67	0.61	-2.61	.010

4.8. Summary

The purpose of this study was to investigate how the creation of a coherent information privacy culture influences information privacy practices thereby helping healthcare organization to achieve collective HIPAA compliance practice. In this chapter, the findings of the data analyses were presented. Descriptive statistics for the sample were presented. Cronbach alpha for the scales were also presented. To address the hypotheses, a series of linear regressions were conducted to examine the predictive relationships. The assumptions of normality and homoscedasticity were assessed before analysis. The hypotheses – H_1, H_3, H_4, H_5, H_7, and H_8 – were supported through the linear regressions. The hypotheses – H_2 and H_6 – were not supported through the linear regressions. A series of independent sample *t*-tests were conducted to assess for differences in the scales between the hospitals. Results of the independent sample *t*-test for Collective HIPAA Compliance Practice by Hospital were statistically significant. Hospital B ($M = 4.67$) scored significantly higher in Collective HIPAA Compliance Practice than Hospital A ($M = 4.46$). In the next chapter, the findings will continue to be explored in connection with the literature.

Chapter 5

Discussion, Implications, Limitations, Recommendations, and Conclusion

This chapter discusses the outcomes of the study, implications of the findings, and presents recommendations regarding how this research can advance knowledge on how healthcare organizations could achieve collective HIPAA compliance practice. This chapter concludes with summary of the studies.

5.1. Discussion

This study set out to investigate the creation of information privacy culture that could help healthcare organizations to achieve collective HIPAA compliance practice. This research further examined how the creation of a cohesive information privacy culture can reduce job tension between the different occupational communities leading to collective information privacy practices. To accomplish these goals, this research proposed the two questions. One, can a coherent information privacy culture be created from the different occupational communities? Two, does creating a coherent information privacy culture lead to collective HIPAA compliance practice? In order to answer the above questions, the study formulated hypotheses from the questions and the findings are discussed and compared to extant literature.

H_1 stated that exposure to the message of patent's information privacy concerns as an issue of importance to the different occupational communities will have a positive impact in developing information privacy beliefs and was supported. The findings

suggested that there was a significant predictive relationship between Exposure to Message and Information Privacy Beliefs. The findings were consistent with literature on the relationship between exposure to message and formation of beliefs (Dillard & Pfau, 2002; Eveland & Garrett, 2014). Studies indicated that exposure to alcohol advertising may also initiate belief in drinking and thereby increasing alcohol consumption among underage drinkers (Anderson et al., 2009; Collins et al., 2007; Ellickson et al., 2005; Snyder et al., 2006).

H_2 posited that information privacy beliefs will have a positive impact on creating a coherent information privacy culture and was supported. H_3 assumed that information privacy attitude will have a positive impact on creating coherent information privacy culture and was supported. H_4 indicated that professional issues integration as part of the culture formation process will have a positive impact on creating a coherent information privacy culture, which was also supported. H_2 through H_4 were subcategory of an overarching construct (Formation of Culture) which was formulated so that the cumulative effect will have a positive influence on the formation of a coherent information privacy culture. All the three hypotheses, H_2, H_3, and H_4 were supported and the cumulative impact positively influenced the formation of a coherent information privacy culture as findings suggested. The results were consistent with extant literature as studies have shown that beliefs and attitudes are pretty much overlapping constructs. Beliefs takes shape internally and help in decision making (Nikitina, Zuraida, & Loh, 2014). Attitudes, on the other hand, arise out of beliefs and has direct or indirect reference with a person's behavior for which he or she carry out the action (Kolekofski & Heminger, A. R. 2003). In addition, Cullum and Harton (2007) found that participants'

attitudes and issues importance became increasingly similar to those living closest to them over time as a result of interpersonal influence processes. Beliefs and attitudes also increased with time as these cultural attributes grew increasingly interdependent. The findings supported the overarching construct (Formation of Culture) and the prediction of the dynamic social impact theory.

H_5 stated that tolerance of diversity as the final phase of the culture formation process will have a positive effect on reducing tensions between the different groups, which was supported. The findings of this study indicate that an organization's tolerance of diversity have a direct relationship to reduce job tensions among employees. The findings support observations made in literature that shows that communications and interactions among individuals create tolerance of diversity within occupational communities in an organization (Gully et al., 2002; Kiggundu, 1983). The acceptance of diversity and role clarity within the communities in turn reduces the job tension which is usually created by role ambiguity within the occupational communities. Downey et al., (2015) found that positive perceptions of diversity practices is positively related to a trusting climate when employees perceive high levels of inclusion.

H_6 stated that information privacy culture created among the different occupational communities within healthcare organization will have a positive impact in reducing job tensions and was not supported. The result of this hypothesis is interesting because the coherent information culture developed should reduce job related tensions. However, the finding is consistent with other research that found that employees who are highly engaged with the workplace tend to maintain a heightened level of concern which in turn causes symptoms of mental stress and tension (Rice et al., 2017). Further

examination of this hypothesis will be necessary in future studies to better understand the findings.

H_7 predicted that information privacy cultural values learned within the different occupational communities in healthcare organization will have a positive impact in collective HIPAA compliance practice, which was supported. The findings were consistent with extant literature that there is a positive relationship between team culture and team collective actions or performance (Adkins & Caldwell, 2004; Chen & Kanfer, 2006). Shin et al., (2016) found that team's relevant culture predicted team task performance, and the relationship was as a result of the values, goals, and norms that a team pursued to shape the regulatory focus of its members. According to Shin et al. (2016), teams' cultural values enhances the collective motivation of team members to fulfill their task requirements. Their findings support the hypothesis that information privacy cultural values learned within the different occupational communities in healthcare organization will have a positive impact in collective HIPAA compliance practice.

H_8 stated that reducing job tension within the different communities in healthcare organizations will have a positive impact on collective HIPAA compliance practices and was supported. The findings are consistent with studies that have shown that Job tension affect a variety of individual and organizational outcomes (Rose, 2003). This study argued that reducing job tension will have a positive relationship to the occupational communities' collective practice and the findings supported the proposal. Again, the results are consistent with several studies that have found that high levels of job tension have negatively impacted value attainment, job satisfaction, and performance (Ahmed &

Ramzan, 2013; Zivnuska, Kiewitz, Hochwarter, W. A., Perrewe, & Zellars, 2002). In other words, it can be stated that decreasing job tension among employees will lead to or increase their desire to work together or collectively to achieve a common goal. In this case, the collective HIPAA compliance practices.

5.2. Implication for Research

Most of the existing research have investigated information privacy culture at the organizational, regional, and country level to better understand the characteristics of information privacy culture. This research filled the gap in extant literature by contributing to the body of knowledge in the information privacy domain by enabling researchers to understand how coherent culture could be created from the different occupational communities. The conceptualized model in this study is the first known empirically tested model for the creation of a coherent information privacy culture in an organizational context. Researchers will be able to apply the conceptualized model in a variety of disciplines, industries, and organizational contexts, such as emergent organizations and government.

Another major contribution of this study is the application of the dynamic social impact theory to explain HIPAA compliance failure phenomena. The findings of this study will contribute to information privacy researchers understanding of how the dynamic social impact theory can be used as a framework to create information privacy culture within healthcare organizations. Turner (1982) found that individuals who believe

that they are part of in-group will operate according to the norms and beliefs of the in-group.

5.3. Implication for Practice

This study found that issues of importance can be communicated to occupational communities in healthcare organizations to persuade them to understand the importance of patients' information privacy concerns and develop information privacy beliefs. Healthcare environment is typically divided by different occupational communities with competing interest. As a result, achieving HIPAA compliance becomes difficult and managers can use communication and interactions to create information privacy culture.

Management could leverage the cultural values and norms identified in this study to influence employees to achieve information privacy compliance. Information privacy awareness programs would be introduced to the members of various communities based on the cultural values identified.

This study found support for linking reduced job tension and its impact on healthcare organizations to achieve collective information privacy compliance practices. With clinicians feeling that their professional views will be protected through tolerance of diversity and the coherent cultural values, collective information privacy practice can be achieved. These findings will encourage practitioners to promote tolerance of diversity in their organizations.

5.4. Limitations

As with any research, this study had a few limitations. One of the limitations is that two healthcare organizations were selected for the study. The two organizations were small community hospitals which may not accurately reflect HIPAA compliance practices as other large institutions. As a result, the generalization of this study may be limited. To generalize this research, future studies should include larger healthcare organizations.

Another limitation noted in this study was that none of the two environments or organizations was controlled as this was not an experimental or qualitative study. This research selected two healthcare organizations with one been exposed to information privacy message to its' occupational communities, and the other without been exposed to information privacy message to its employees to test the creation of coherent information privacy culture and collective information privacy practice. Without controlling one of the environments used in the study may have caused the study to find small but significant difference between the two healthcare organizations. Future studies could implement a controlled environment and possibly conduct a qualitative.

The length of the survey was considered to be a limitation. The survey had 39 questions and was estimated to be completed in 15 to 20 minutes. Several studies have shown that there is a negative relation between survey length and response rate and quality (Deutskens et al., 2004; Heberlein & Baumgartner, 1978; Yammarino et al., 1991). Other studies indicate that surveys that take longer than 11 minutes to complete usually result in lower response rates. Rosenblum (2001) found that online surveys should consist of approximately 20 questions and this study survey consisted of 39

questions and the average completion time was less than ten minutes. This means that participants may have answered the questions without much thought; impacting the quality of the data. Future studies should limit the number of questions if possible.

The survey participants were recruited without incentives to participate and this may have limited the number of responses received. Even though this study received enough responses based on the sample size calculated using the statistical power analysis, several studies have shown that incentives are an effective mean to increase the response rate in offline and online surveys (Church, 1993; Dillman, 2000). Wang et al. (2002) health care survey study found that financial incentives increased response rates significantly. This study did not use any incentives and future studies should consider giving at least small incentives to the participant to enhance the possibility of increasing the response rate.

5.5. Future Research

This research investigated the creation of a coherent information privacy culture and did not find any existing studies about culture creation. This study opens the opportunity for future research to investigate deeper into the culture creation area. Future research is needed to further test the research model created out of the Dynamic Social Impact Theory. The methodology used in this study was quantitative and future research could test theory utilizing experimental or qualitative methodology.

Small community hospitals were in this study which may not accurately reflect HIPAA compliance practices as other large institutions. Therefore, future studies should

seek to include larger healthcare organizations and possibly expanding the region, as different regions experience different sets of challenges.

H_6 was not supported in this study and future research should examine why this hypothesis was not supported. This study proposed that information privacy culture created in the organization will have a positive influence in reducing job tensions among the different organizational communities and the relationship was not supported. Therefore, further examination will be helpful to explain why a coherent culture was not found to support reduced job tensions.

5.6. Conclusion

The phenomenon investigated in this research was the information privacy compliance failure in healthcare organizations. As a result, the research specifically examined the creation of information privacy culture among the different occupational communities in healthcare organizations that could help an organization to achieve collective HIPAA compliance practice. In healthcare organizations, many different occupational communities (e.g., physicians, nurses, technicians. etc.) work and interact with one another to accomplish a common goal. However, their approach to providing the best patient care differs based on their training and consequently, creating tensions among the groups. Therefore, making it difficult for an organization to achieve information privacy compliance (Adam and Blandford, 2005).

For this research to achieve its stated objectives, two questions were proposed as follows. First, can a coherent information privacy culture be created from the different

occupational communities? Second, does creating a coherent information privacy culture lead to collective HIPAA compliance practice? To answer the above questions, an interdisciplinary research theoretical foundation was integrated from information systems, information privacy concerns, information privacy attitudes and beliefs, social psychology streams of studies, and in the area of culture creation. The research remodel was developed and the study formulated hypotheses from the questions. Survey data was collected from two healthcare organizations with one being exposed to information privacy message to its' occupational communities and the other without being exposed to information privacy message to its employees to test the hypotheses.

The hypotheses – H_1, H_2, H_3, H_4, H_5, H_7, and H_8 – were supported through the linear regression analysis. The hypotheses – H_6 – was not supported through the linear regression analysis. A series of independent sample *t*-tests were conducted to assess for differences in the scales between the hospitals. Results of the independent sample *t*-test for Collective HIPAA Compliance Practice by Hospital were statistically significant. Hospital B ($M = 4.67$) scored significantly higher in Collective HIPAA Compliance Practice than Hospital A ($M = 4.46$).

Based on the multiple regression analysis, the results of the study were reviewed in connection with the literature. The findings supported the fundamental predictions of the study. The research predicted that communicating patients' information privacy concerns as issue of importance to the occupational communities will lead to the development of information privacy belief and a positive attitude toward patient information privacy concerns. The information privacy attitude will have a positive impact in creating information privacy culture. Tolerance of diversity on the other hand,

will have a positive effect on reducing job tensions between the different groups. It was finally predicted that the coherent culture created, and reduced tension will have a positive impact on collective HIPAA compliance practice. The results supported all the key assumptions of the study and the findings were consistent with extant literature.

Finally, the study identified four limitations and recommended future studies that will further explore and expand the current investigations and findings.

Appendices

Appendix A

Survey Instrument

Demographics	
Occupation	Please indicate your profession.
Job Title	What is your job title?
Tenure	How many years have you worked at your current organization? 1) One year and under 2) Two—three years 3) Four—five years 4) Six—seven years 5) Eight—nine years 6) 10 years and over
Gender	Please indicate your gender. 1) Male 2) Female
Age	Please indicate your age. 1) 20 years and under 2) 21—30 years 3) 31—40 years 4) 41—50 years 5) 51—60 years 6) 61—and over

H1: Exposure to Message → Information Privacy Beliefs:
Exposure to Message (issue importance) is organizations' action to expose patient information privacy concerns as an issue of importance to the occupational communities through interactions. The following is a list of statements related to information privacy concerns as issue importance to you and your organization.

Please read each item and rate the level of likelihood you attribute to each statement from: (1) Strongly Disagree to (5) Strongly Agree.

Construct Indicator	Item	Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree
EM1	How frequent is patient information privacy concerns or HIPAA policies and procedures communicated to you in your organization?	1	2	3	4	5
EM2	How frequent is HIPAA compliance guidelines communicated to you in your organization?	1	2	3	4	5
EM3	How often do you communicate with your co-workers about patient information privacy concerns or HIPAA compliance guidelines in your organization?	1	2	3	4	5

H2: Information Privacy Beliefs → Information Privacy Culture:

Occupational communities in healthcare organizations develop information privacy belief about patient information privacy concerns. The following is a list of statements related to information privacy beliefs to you.

Please read each item and rate the level of likelihood you attribute to each statement from: (1) Not at all important (5) Very important.

Construct Indicator	item	Not at all important	Slightly important	Neutral	Moderately important	Very important
IPB1	The communication regarding HIPAA compliance in my organization has made me more aware of the patients' information privacy concerns.	1	2	3	4	5
IPB2	I have a good understanding of patient information privacy concerns and patient's information privacy should be protected.	1	2	3	4	5
IPB3	I have a good understanding of HIPAA compliance guidelines and the guidelines should be followed to protect patient information privacy.	1	2	3	4	5

H3: Information Privacy Attitude → Information Privacy Culture:

Information privacy attitude refers to the occupational communities' belief in information privacy growing into positive attitude toward patient information privacy concerns. The following is a list of statements related to information privacy attitude.

Please read each item and rate the level of likelihood you attribute to each statement from: (1) Strongly Disagree to (5) Strongly Agree.

Construct Indicator	Item	Strong Disagree	Disagree	Neither Disagree Nor Agree Agree	Agree	Strongly Agree
IPA1	It is important for healthcare organizations to take more steps to make sure that the patient personal information in their computerized files is accurate.	1	2	3	4	5
IPA2	It is important for healthcare organizations to ensure that unauthorized people cannot access patients' personal information in their computers.	1	2	3	4	5
IPA3	As an employee, it is important to protect patients' information privacy.	1	2	3	4	5

IPA4	I ‘m confident that protecting patients’ information privacy will contribute to achieving HIPAA compliance in my organization.	1	2	3	4	5

H4: Professional Issue Integration → Information Privacy Culture:

Professional issues integration refers to the extent of reciprocal support the occupational communities receives for their professional concerns other than information privacy issues. The following is a list of statements related to professional issue integration in your organization.

Please read each item and rate the level of likelihood you attribute to each statement from: (1) Strongly Disagree to (5) Strongly Agree.

Construct Indicator	Item	Strong Disagree	Disagree	Neither Disagree Nor Agree Agree	Agree	Strongly Agree
PII1	Professionals in your organization support other professions viewpoints or opinions.	1	2	3	4	5
PII2	Professionals in your organization respect and value the roles of other professions.	1	2	3	4	5
PII3	Professionals in your organization	1	2	3	4	5

	accept and share responsibilities with other professions.					

H5: Tolerance of Diversity → Reduced Job Tension:

Tolerance diversity refers to occupational communities in healthcare organizations acceptance of their professional differences. The following is a list of statements related to tolerance of diversity in your organization.

Please read each item and rate the level of likelihood you attribute to each statement from: (1) Strongly Disagree to (5) Strongly Agree.

Construct Indicator	Items	Strong Disagree	Disagree	Neither Disagree Nor Agree Agree	Agree	Strongly Agree
TD1	The different professionals involved in HIPAA compliance makes it easier for you?	1	2	3	4	5
TD2	I do enjoy working with different professionals to achieve HIPAA compliance?	1	2	3	4	5

H6: Information Privacy Culture → Collective HIPAA Compliance Practice:

The information privacy culture is exhibited through the culture content or characteristics such as values, attitudes, and beliefs. The following is a list of statements related to information privacy culture in your organization.

Please read each item and rate the level of likelihood you attribute to each statement from: (1) Strongly Disagree to (5) Strongly Agree.

Construct Indicator	Item	Strong Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree
IPC-V1	Healthcare organizations should not be allowed to collect patients' personal information without their permission.	1	2	3	4	5
IPC-V2	The amounts and types of patient personal information stored by various healthcare organizations should be strictly limited.	1	2	3	4	5
IPC-V3	The uses healthcare organizations make of patients' personal information should be strictly limited	1	2	3	4	5

IPC-V4	Healthcare organizations that collect and store patients' personal information should not have the right to release this information to other organizations without permission.	1	2	3	4	5
IPC-B1	I feel that healthcare organizations should do more to address patients' fear of losing control over their health records.	1	2	3	4	5
IPC-B2	I feel that employees are not able to control the uses that organization make of patients' personal information.	1	2	3	4	5
IPC-B3	It bothers me that once patients have given their personal information to an organization, they have no	1	2	3	4	5

	way to control the future release of that information.					
IPC-A1	I 'm pleased with my ability to keep organizations from collecting patients' personal information that patients would like to keep secret.	1	2	3	4	5
IPC-A2	I'm concern about the fact that many organizations are storing patients' personal information in computerized files without their permission.	1	2	3	4	5
IPC-A3	I 'm highly satisfied with my ability to keep my organization from releasing patients' personal information to other organizations without their permission.	1	2	3	4	5

H7: Reduced Job Tension → Collective HIPAA Compliance Practice:

The reduced job tension refers to how the different occupational communities feel clear about their jobs and without ambiguity of their roles in HIPAA compliance practice. The following is a list of statements related to job tension in your organization.

Please read each item and rate the level of likelihood you attribute to each statement from: (1) Not at all clear to (5) Not at all clear.

Construct Indicator	Item	Not at all clear	Not so clear	Somewhat clear	Very clear	Extremely clear
RJT1	How clear are you about your role in safeguarding patient privacy?	1	2	3	4	5
RJT2	Do you feel you are always as clear as you would like to be about what to do to ensure HIPAA compliance?	1	2	3	4	5
RJT3	Do you feel you are always as clear as you would like to be about what you have to do to protect patient privacy?	1	2	3	4	5
RJT4	In general, how clearly defined are the policies and procedures and HIPAA guidelines	1	2	3	4	5

	of the hospital that affect your job?					

H8: Collective HIPAA Compliance Practice.

Collective HIPAA compliance practice refers to the ability of the members of the different occupational communities to adhere to the established information privacy policies and procedures. The following is a list of statements related to collective HIPAA compliance practice in your organization.

Please read each item and rate the level of likelihood you attribute to each statement from: (1) Strongly Disagree to (5) Strongly Agree.

Construct Indicator	Item	Strong Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree
CHCP1	Professionals in your organization will continue to protect patient privacy.	1	2	3	4	5
CHCP2	Professionals in your organization are well-prepared to ensure HIPAA compliance.	1	2	3	4	5
CHCP3	Professionals in your organization are committed to observing HIPAA guidelines.	1	2	3	4	5
CHCP4	Professionals in your organization are	1	2	3	4	5

	committed to observing HIPAA procedures.					
CHCP5	Professionals in your organization will continue to safeguard patient privacy.	1	2	3	4	5

Appendix B

IRB Approval

NSU NOVA SOUTHEASTERN UNIVERSITY
Institutional Review Board

MEMORANDUM

To: **Osborne Obeng**

From: **Ling Wang, Ph.D.,**
Center Representative, Institutional Review Board

Date: **November 30, 2018**

Re: **IRB #: 2018-630; Title, "Examining the Creation of Information Privacy Culture in Healthcare Organizations to Achieve Collective HIPAA Compliance Practice"**

I have reviewed the above-referenced research protocol at the center level. Based on the information provided, I have determined that this study is exempt from further IRB review under **45 CFR 46.101(b) (Exempt 2: Interviews, surveys, focus groups, observations of public behavior, and other similar methodologies)**. You may proceed with your study as described to the IRB. As principal investigator, you must adhere to the following requirements:

1) CONSENT: If recruitment procedures include consent forms, they must be obtained in such a manner that they are clearly understood by the subjects and the process affords subjects the opportunity to ask questions, obtain detailed answers from those directly involved in the research, and have sufficient time to consider their participation after they have been provided this information. The subjects must be given a copy of the signed consent document, and a copy must be placed in a secure file separate from de-identified participant information. Record of informed consent must be retained for a minimum of three years from the conclusion of the study.

2) ADVERSE EVENTS/UNANTICIPATED PROBLEMS: The principal investigator is required to notify the IRB chair and me (954-262-5369 and Ling Wang, Ph.D., respectively) of any adverse reactions or unanticipated events that may develop as a result of this study. Reactions or events may include, but are not limited to, injury, depression as a result of participation in the study, life-threatening situation, death, or loss of confidentiality/anonymity of subject. Approval may be withdrawn if the problem is serious.

3) AMENDMENTS: Any changes in the study (e.g., procedures, number or types of subjects, consent forms, investigators, etc.) must be approved by the IRB prior to implementation. Please be advised that changes in a study may require further review depending on the nature of the change. Please contact me with any questions regarding amendments or changes to your study.

The NSU IRB is in compliance with the requirements for the protection of human subjects prescribed in Part 46 of Title 45 of the Code of Federal Regulations (45 CFR 46) revised June 18, 1991.

Cc: Souren Paul
Ling Wang, Ph.D.

Appendix C

Profession and Job Tittle

C.1 What is your profession or occupation?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		7	3.9	3.9	3.9
	Accounting Clerk	1	.6	.6	4.4
	Administrative assistant	4	2.2	2.2	6.6
	Admission insurance registrar	1	.6	.6	7.2
	Attorney	2	1.1	1.1	8.3
	Behavioral Health Professional	2	1.1	1.1	9.4
	Billing	4	2.2	2.2	11.6
	CODER	1	.6	.6	12.2
	Coordinator of Peripheral Circular Lab	2	1.1	1.1	13.3
	Dietitian	1	.6	.6	13.8
	Doctor	1	.6	.6	14.4
	Driver	2	1.1	1.1	15.5
	EDT	2	1.1	1.1	16.6
	Emergency Dept	1	.6	.6	17.1
	Engineer	5	2.8	2.8	19.9
	Engineering	5	2.8	2.8	22.7
	Environmental services	2	1.1	1.1	23.8

	ER Tech	1	.6	.6	24.3
	Gas operator or operations mechanics	4	2.2	2.2	26.5
	Health Care	2	1.1	1.1	27.6
	health information management	1	.6	.6	28.2
	Health Information Management	1	.6	.6	28.7
	Healthcare	2	1.1	1.1	29.8
	Healthcare manager	2	1.1	1.1	30.9
	Heavy mechanical equipment operator	4	2.2	2.2	33.1
	Hospital Employee	1	.6	.6	33.7
	House Keeper	1	.6	.6	34.3
	Human Resources	1	.6	.6	34.8
	Information Systems	2	1.1	1.1	35.9
	Information Technology	2	1.1	1.1	37.0
	IT	5	2.8	2.8	39.8
	Management	1	.6	.6	40.3
	Medical student	6	3.3	3.3	43.6
	Medical Student	1	.6	.6	44.2
	Medical student/public health management team member	1	.6	.6	44.8
	Medicine	1	.6	.6	45.3
	MRI Technologist	1	.6	.6	45.9
	Nurse	20	11.0	11.0	56.9

	Nurse practitioner	5	2.8	2.8	59.7
	OCCUPATIONAL THERAPIST	2	1.1	1.1	60.8
	OUTPT CODER	1	.6	.6	61.3
	Paramedic	1	.6	.6	61.9
	Patient Financial Services Biller	1	.6	.6	62.4
	Pharmacist	2	1.1	1.1	63.5
	Pharmacy technician	1	.6	.6	64.1
	Physician	8	4.4	4.4	68.5
	PTA	2	1.1	1.1	69.6
	Public Safety	2	1.1	1.1	70.7
	Radiology	2	1.1	1.1	71.8
	Registered nurse	1	.6	.6	72.4
	Registered Nurse	18	9.9	9.9	82.3
	Registered Nurse/IT	1	.6	.6	82.9
	RN	14	7.7	7.7	90.6
	RN RRT	4	2.2	2.2	92.8
	Student	6	3.3	3.3	96.1
	Studnet	2	1.1	1.1	97.2
	Supervisor	2	1.1	1.1	98.3
	THERAPIST	2	1.1	1.1	99.4
	Ultrasound Tech.	1	.6	.6	100.0
	Total	181	100.0	100.0	

C.2 What is your job title?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		12	6.6	6.6	6.6
	Accounting Clerk	1	.6	.6	7.2
	Administrative assistant	4	2.2	2.2	9.4
	Admission clerk registrar	1	.6	.6	9.9
	Analyst	1	.6	.6	10.5
	Application Support	1	.6	.6	11.0
	Assistance Manager	4	2.2	2.2	13.3
	Associate General Counsel	1	.6	.6	13.8
	Buyer	2	1.1	1.1	14.9
	Chief Compliance Officer	1	.6	.6	15.5
	Clinical Dietitian 1	1	.6	.6	16.0
	Clinical Engineering Manager	2	1.1	1.1	17.1
	Clinical Informatics Pharmacist	2	1.1	1.1	18.2
	Clinical Informatics Specialist	1	.6	.6	18.8
	CODER	1	.6	.6	19.3
	CODING	1	.6	.6	19.9
	computer specialist	2	1.1	1.1	21.0
	Coordinator of Peripheral Vascular Lab	2	1.1	1.1	22.1

	Director	3	1.7	1.7	23.8
	Director Medical Records/Privacy Officer	1	.6	.6	24.3
	Dr	2	1.1	1.1	25.4
	EDT	3	1.7	1.7	27.1
	Emergency Department Tech	1	.6	.6	27.6
	Engineer	5	2.8	2.8	30.4
	health information management	1	.6	.6	30.9
	Hospitalist	5	2.8	2.8	33.7
	Housekeeper	2	1.1	1.1	34.8
	HR Coordinator	1	.6	.6	35.4
	ICU RN	5	2.8	2.8	38.1
	IT Director	2	1.1	1.1	39.2
	Lab engineer	5	2.8	2.8	42.0
	Lead ultrasound tech	1	.6	.6	42.5
	Management	2	1.1	1.1	43.6
	Manager	4	2.2	2.2	45.9
	Medical student	5	2.8	2.8	48.6
	Mental health Counselor	2	1.1	1.1	49.7
	Network Administrator	1	.6	.6	50.3
	NP	2	1.1	1.1	51.4
	Nurse	1	.6	.6	51.9
	Nurse Manager	5	2.8	2.8	54.7

	Nurse practitioner	5	2.8	2.8	57.5
	Nursing Officer	5	2.8	2.8	60.2
	Office supervisor	2	1.1	1.1	61.3
	Operations mechanic	4	2.2	2.2	63.5
	Operations mechanics	4	2.2	2.2	65.7
	Patient Financial Services Biller	1	.6	.6	66.3
	PCT	1	.6	.6	66.9
	Pharmacy technician	1	.6	.6	67.4
	Podiatrist	1	.6	.6	68.0
	PTA	2	1.1	1.1	69.1
	Public safety driver	1	.6	.6	69.6
	Public Safety Officer	1	.6	.6	70.2
	Rather not say	1	.6	.6	70.7
	Registered nurse	6	3.3	3.3	74.0
	Registered Nurse	2	1.1	1.1	75.1
	RN	17	9.4	9.4	84.5
	Security	1	.6	.6	85.1
	Senior HR Generalist	1	.6	.6	85.6
	Staff nurse	6	3.3	3.3	89.0
	STAFF OCCUAPTIONAL THERAPIST/REHAB SERVICES MGR	2	1.1	1.1	90.1
	Staff Tech.	1	.6	.6	90.6
	Student	8	4.4	4.4	95.0
	Student doctor	1	.6	.6	95.6

	Supervisor	4	2.2	2.2	97.8
	SUPERVISOR	2	1.1	1.1	98.9
	Technical Solutions Analyst	1	.6	.6	99.4
	Transportation	1	.6	.6	100.0
	Total	181	100.0	100.0	

Appendix D

Regression Analysis Tables

D.1 Correlation Matrix Summary

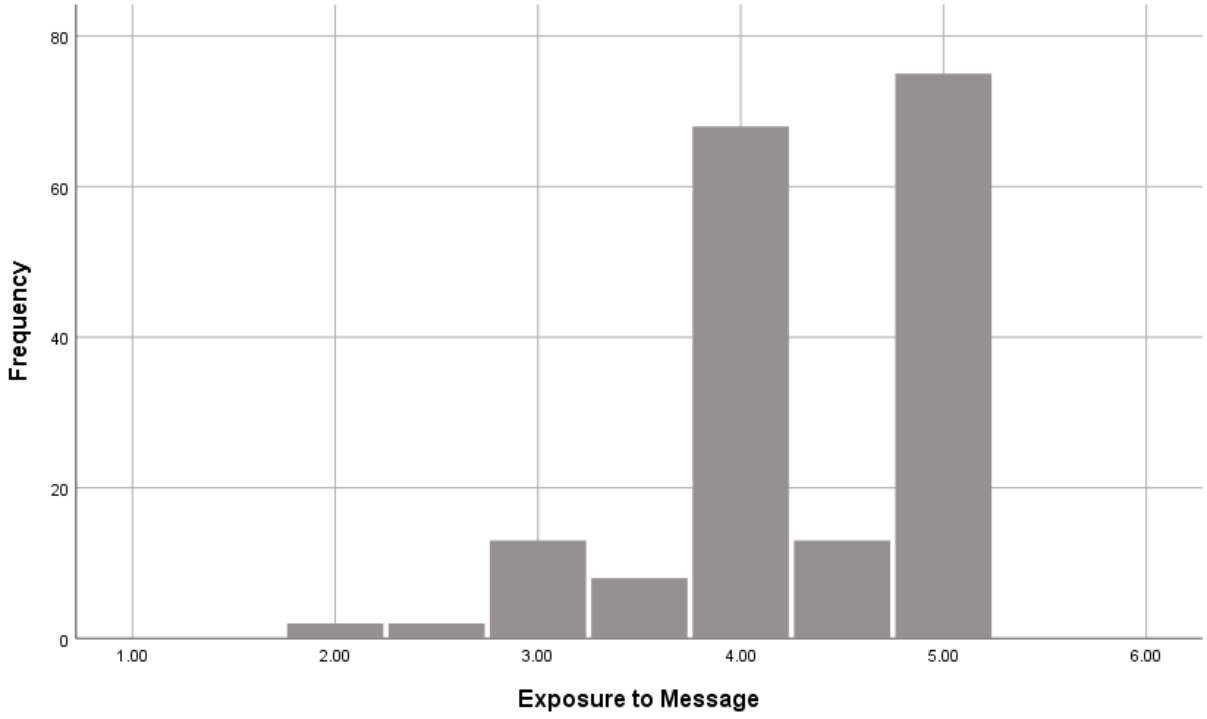
Correlations

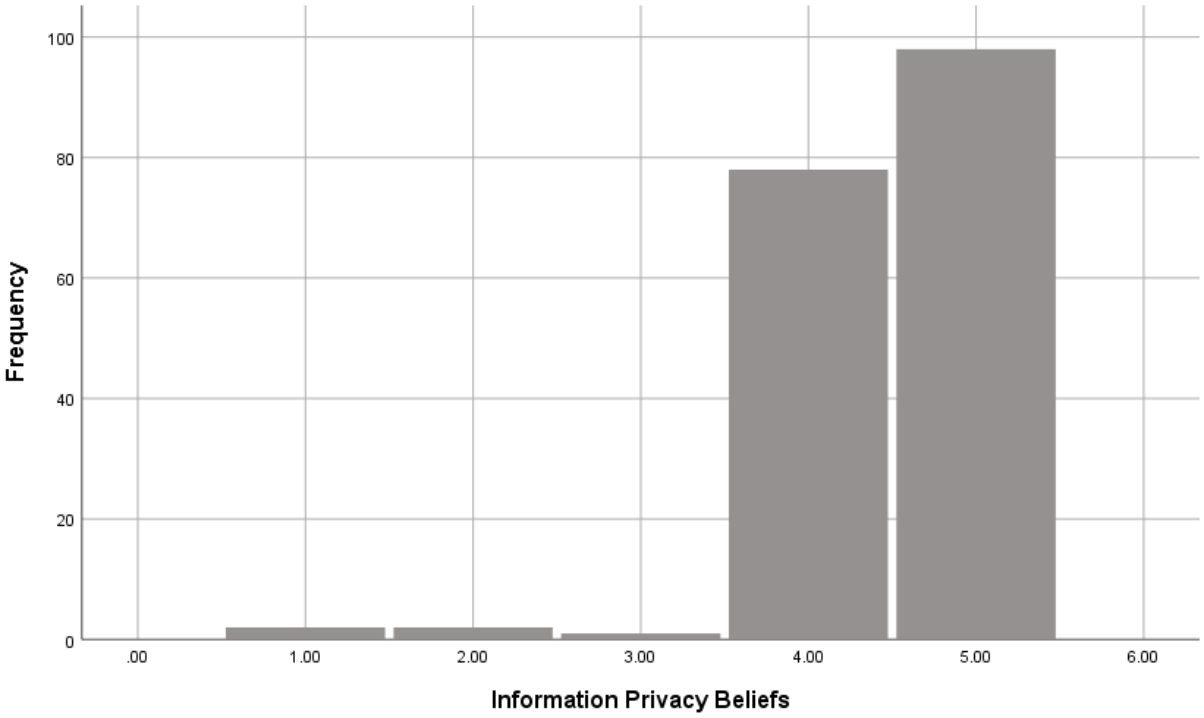
		Exposure to Message	Information Privacy Beliefs	Information Privacy Attitudes	Professional Issue Integration	Tolerance of Diversity	Information Privacy Culture	Reduced Job Tension	Collective HIPAA Compliance Practice
Exposure to Message	Pearson Correlation	1	.555**	.291**	.352**	.422**	.221**	.429**	.292**
	Sig. (2-tailed)		.000	.000	.000	.000	.003	.000	.000
	N	181	181	181	181	181	181	181	181
Information Privacy Beliefs	Pearson Correlation	.555**	1	.548**	.442**	.495**	.377**	.479**	.382**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.000	.000
	N	181	181	181	181	181	181	181	181
Information Privacy Attitudes	Pearson Correlation	.291**	.548**	1	.670**	.452**	.607**	.354**	.606**
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.000	.000
	N	181	181	181	181	181	181	181	181
Professional Issue Integration	Pearson Correlation	.352**	.442**	.670**	1	.605**	.526**	.505**	.660**
	Sig. (2-tailed)	.000	.000	.000		.000	.000	.000	.000
	N	181	181	181	181	181	181	181	181
Tolerance of Diversity	Pearson Correlation	.422**	.495**	.452**	.605**	1	.463**	.698**	.509**
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.000	.000
	N	181	181	181	181	181	181	181	181

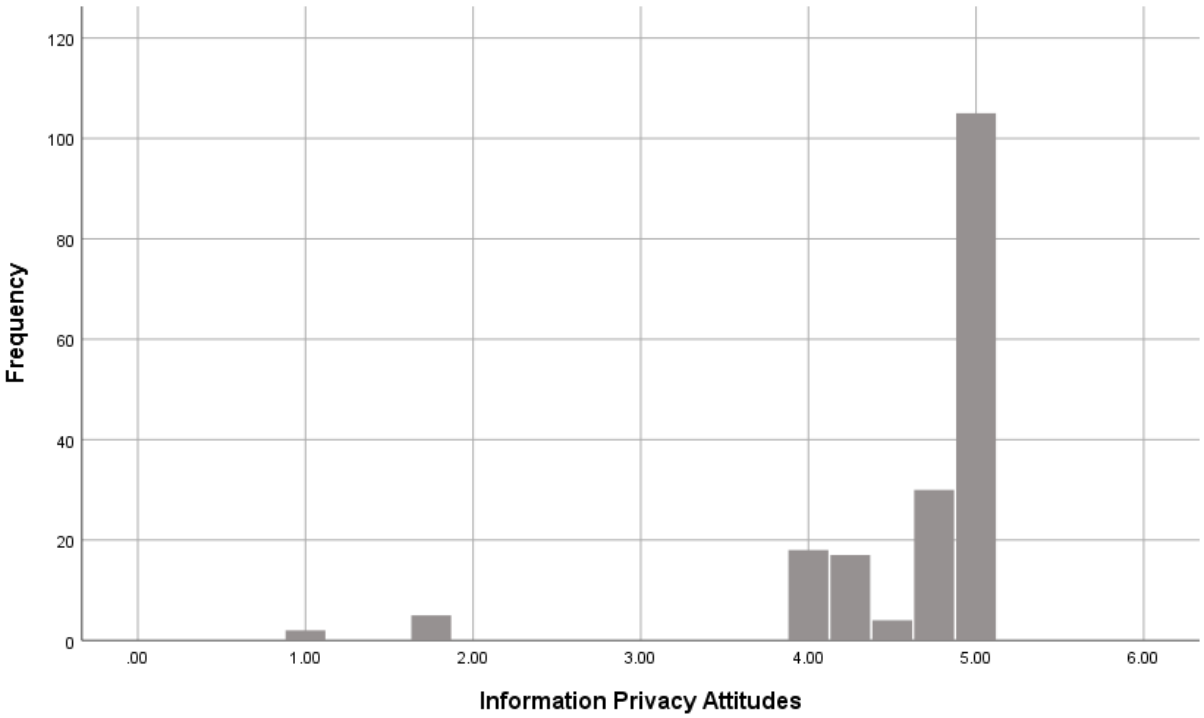
Information Privacy Culture	Pearson Correlation	.221**	.377**	.607**	.526**	.463**	1	.358**	.413**
	Sig. (2-tailed)	.003	.000	.000	.000	.000		.000	.000
	N	181	181	181	181	181	181	181	181
Reduced Job Tension	Pearson Correlation	.429**	.479**	.354**	.505**	.698**	.358**	1	.554**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000		.000
	N	181	181	181	181	181	181	181	181
Collective HIPAA Compliance Practice	Pearson Correlation	.292**	.382**	.606**	.660**	.509**	.413**	.554**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	
	N	181	181	181	181	181	181	181	181

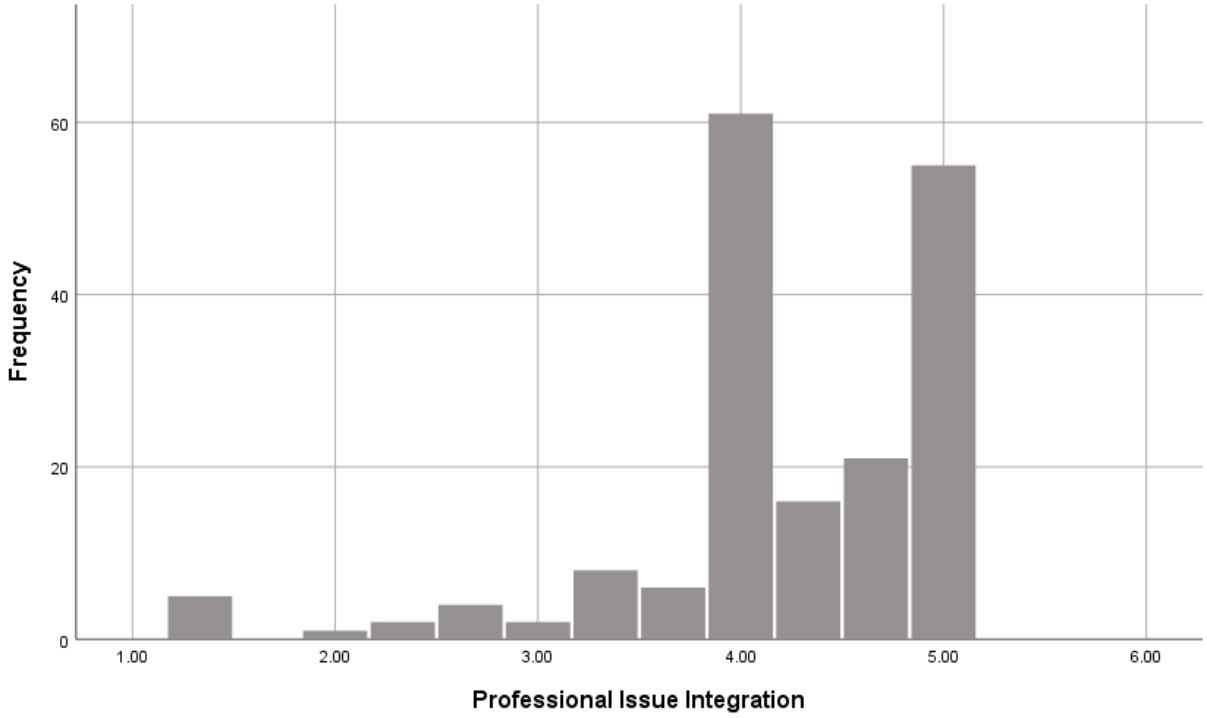
**. Correlation is significant at the 0.01 level (2-tailed).

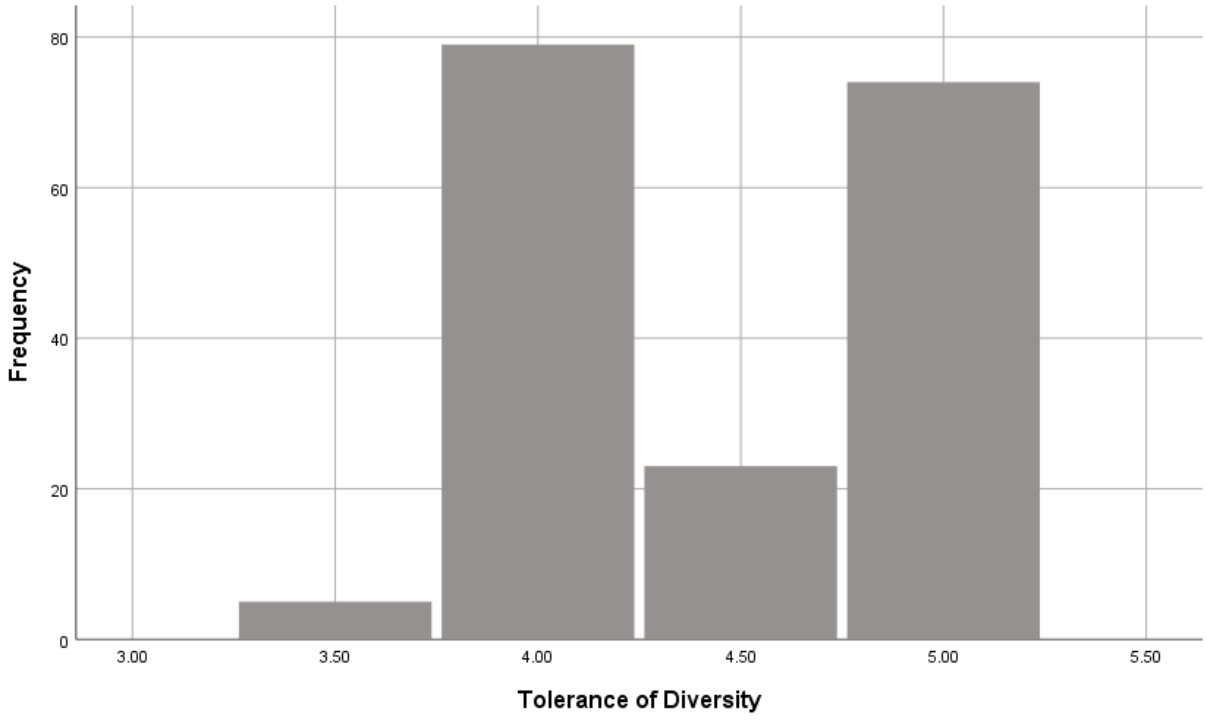
D.2 Histogram

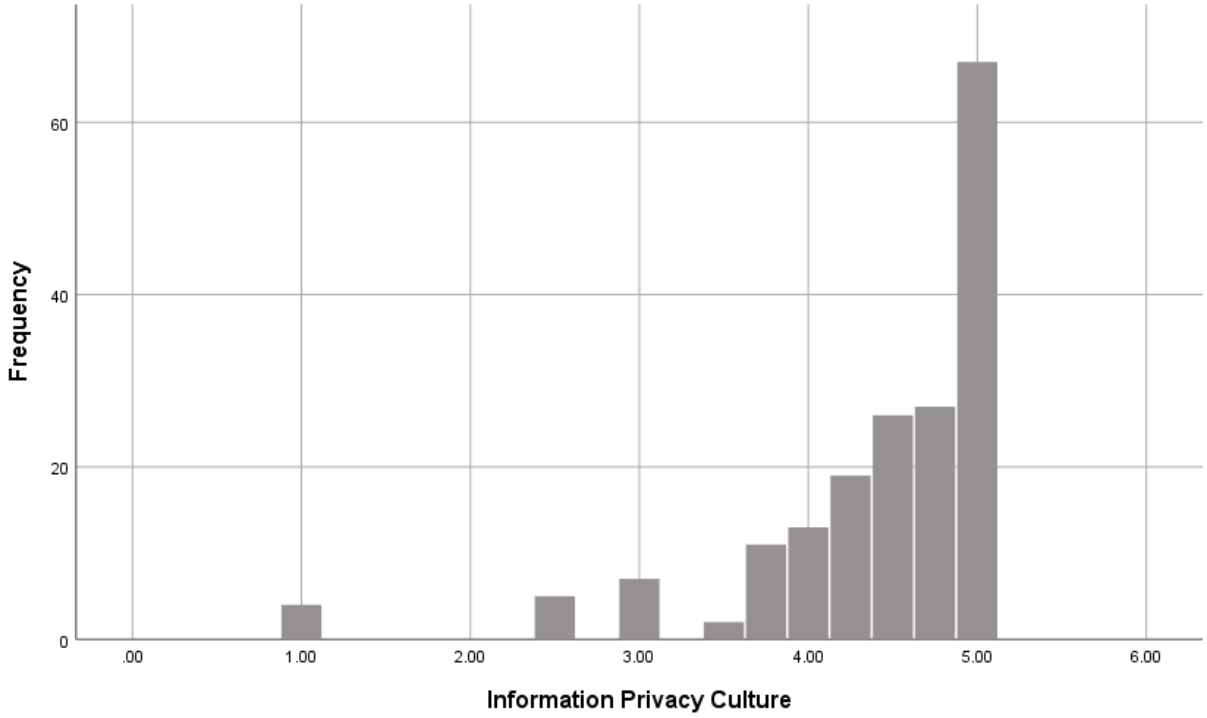


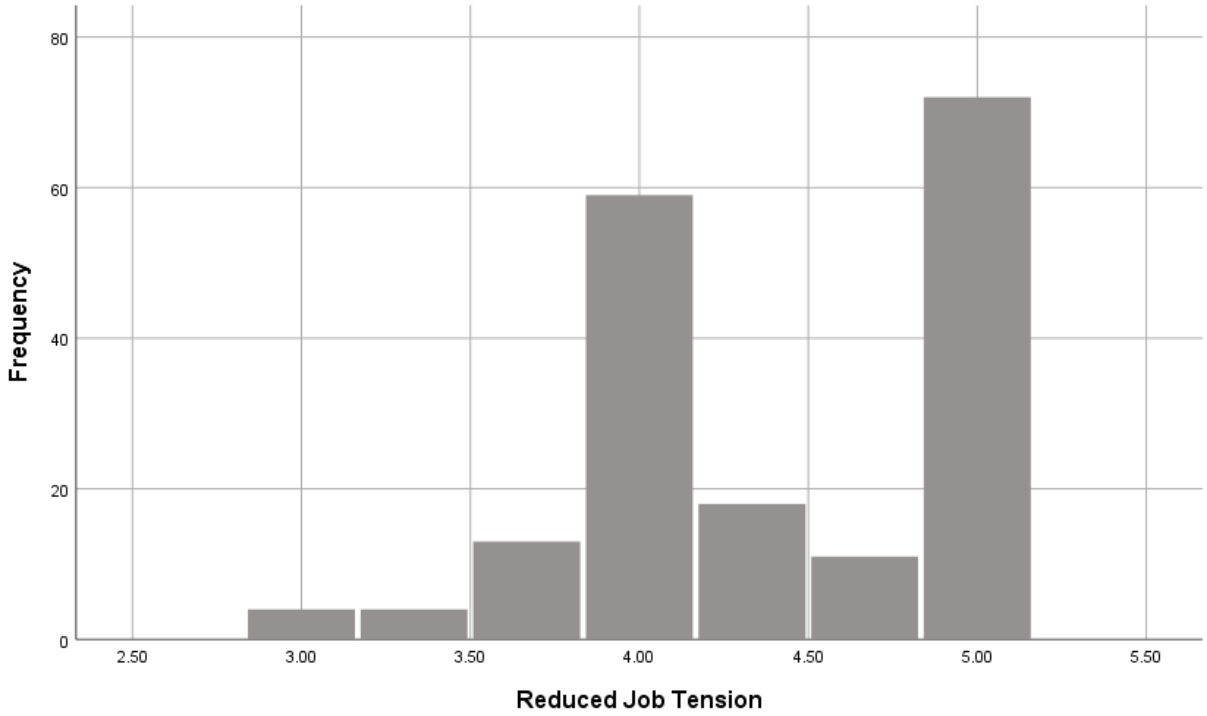

Frequency
100
80
60
40
20
0
.00
1.00
2.00
3.00
4.00
5.00
6.00
Information Privacy Beliefs

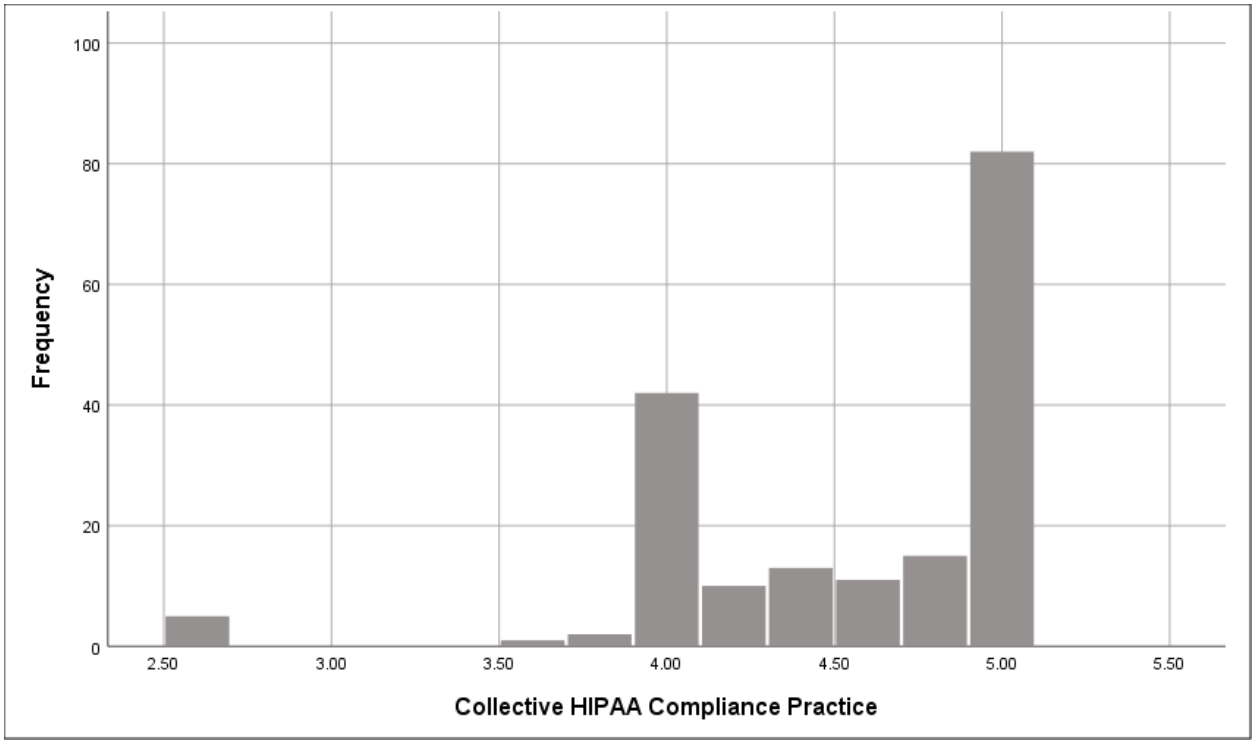

Frequency
120
100
80
60
40
20
0
.00
1.00
2.00
3.00
4.00
5.00
6.00
Information Privacy Attitudes


Frequency
60
40
20
0
1.00
2.00
3.00
4.00
5.00
6.00
Professional Issue Integration


Frequency
80
60
40
20
0
3.00
3.50
4.00
4.50
5.00
5.50
Tolerance of Diversity


Frequency
60
40
20
0
.00
1.00
2.00
3.00
4.00
5.00
6.00
Information Privacy Culture


Frequency
80
60
40
20
0
2.50
3.00
3.50
4.00
4.50
5.00
5.50
Reduced Job Tension


Frequency
100
80
60
40
20
0
2.50
3.00
3.50
4.00
4.50
5.00
5.50
Collective HIPAA Compliance Practice

Appendix E

Residuals scatterplot

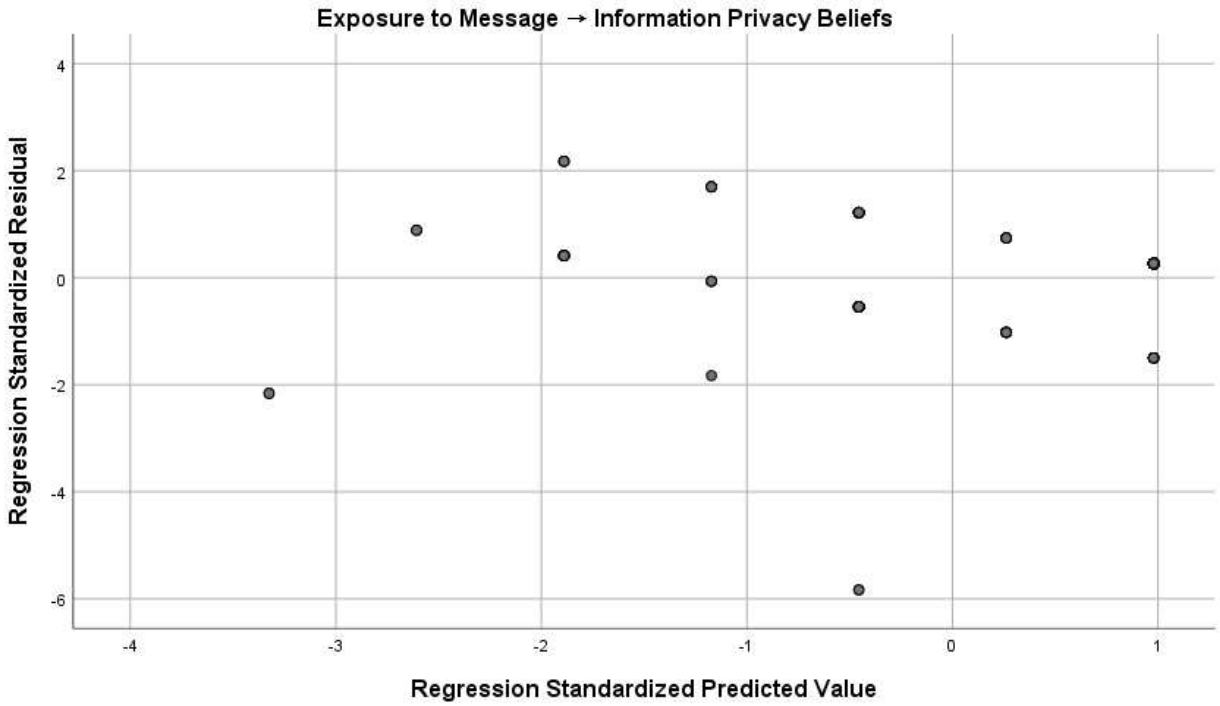


Figure 9. Residuals scatterplot for relationship between Exposure to Message and Information Privacy Beliefs.

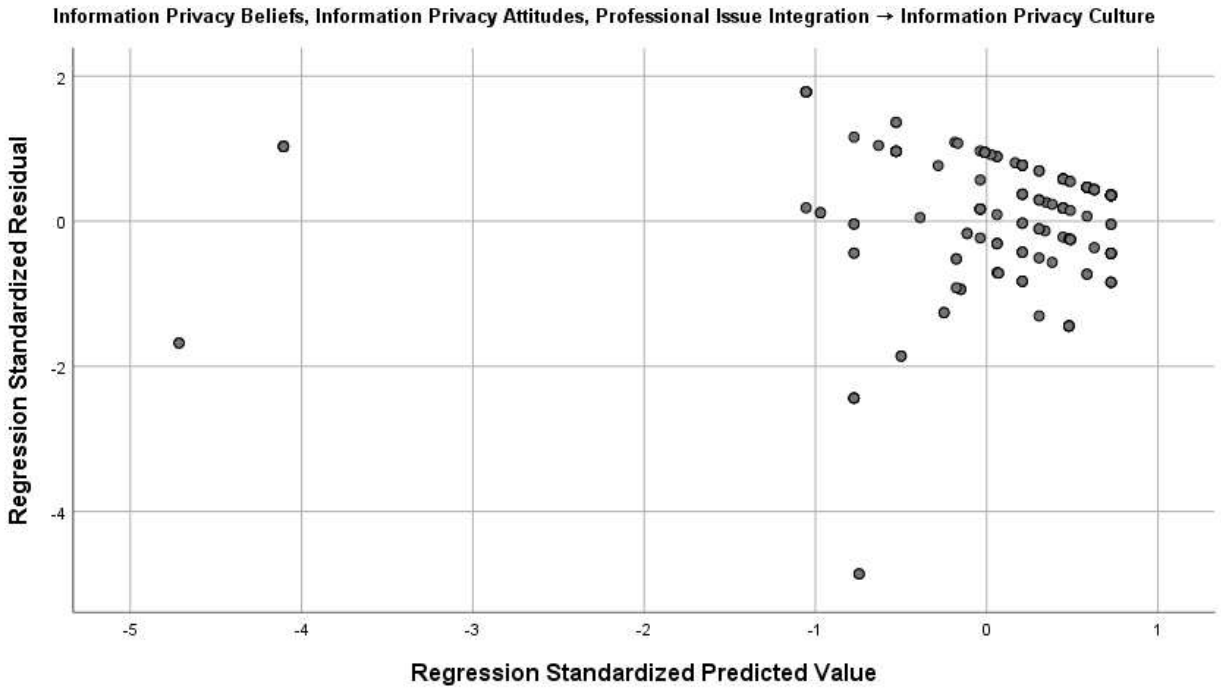


Figure 10. Residuals scatterplot for relationship between Information Privacy Beliefs, Information Privacy Attitudes, Professional Issue Integration, and Information Privacy Culture.

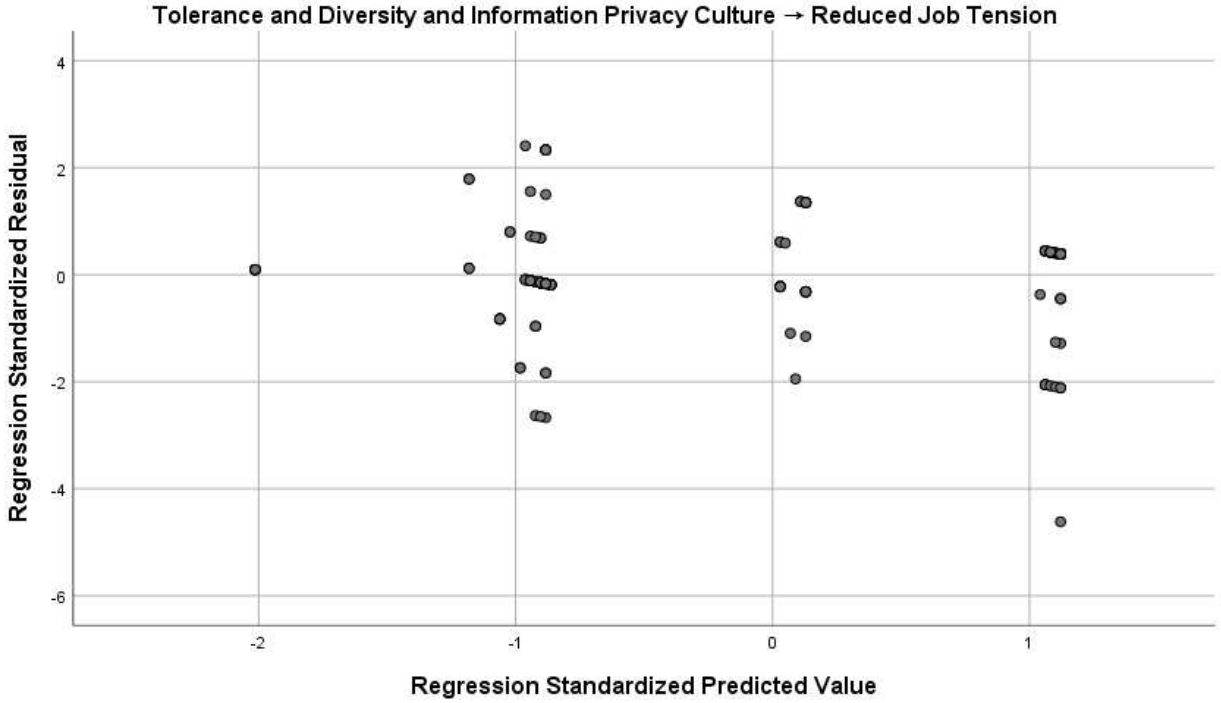


Figure 11. Residuals scatterplot for relationship between Tolerance of Diversity, Information Privacy Culture, and Reduced Job Tension.

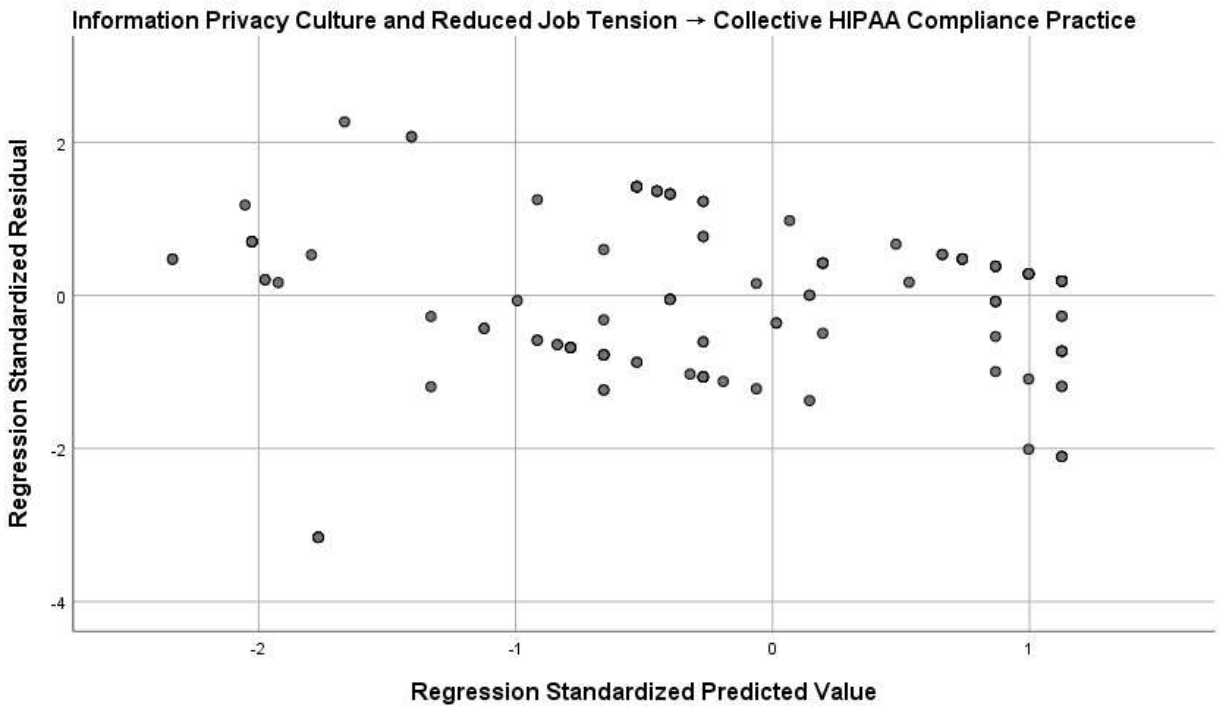


Figure 12. Residuals scatterplot for relationship between Information Privacy Culture, Reduced Job Tension, and Collective HIPAA Compliance Practice.

Appendix F

Factor Analysis Tables

F 1. Descriptive Statistics

Descriptive Statistics				
	Mean	Std. Deviation	Analysis N	Missing N
ExpMessage1	4.26	.794	179	0
ExpMessage2	4.39	.714	179	0
ExpMessage3	4.17	.729	176	3
InfoPrBelief1	4.48	.682	179	0
InfoPrBelief2	4.49	.810	179	0
InfoPrBelief3	4.58	.607	179	0
InfoPrAttitude1	4.49	.956	179	0
InfoPrAttitude2	4.62	.937	179	0
InfoPrAttitude3	4.76	.698	179	0
InfoPrAttitude4	4.71	.631	179	0
ProfIssueInt1	4.21	.952	179	0
ProfIssueInt2	4.21	.872	179	0
ProfIssueInt3	4.26	.744	179	0
ToleDiv1	4.46	.500	179	0
ToleDiv2	4.45	.553	179	0
InfoPrCult_V1	4.50	.926	179	0
InfoPrCult_V2	4.36	.958	179	0
InfoPrCult_V3	4.39	.901	179	0
InfoPrCult_V4	4.46	.913	179	0
RedJobTens1	4.48	.544	178	1
RedJobTens2	4.37	.626	178	1
RedJobTens3	4.37	.636	179	0
RedJobTens4	4.39	.593	179	0
ColHipComPrac1	4.50	.782	179	0
ColHipComPrac2	4.55	.671	179	0
ColHipComPrac3	4.55	.563	179	0
ColHipComPrac4	4.60	.502	179	0
ColHipComPrac5	4.58	.652	179	0

F 2. KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.849
Bartlett's Test of Sphericity	Approx. Chi-Square	5325.158
	df	378
	Sig.	.000

F 3. Communalities

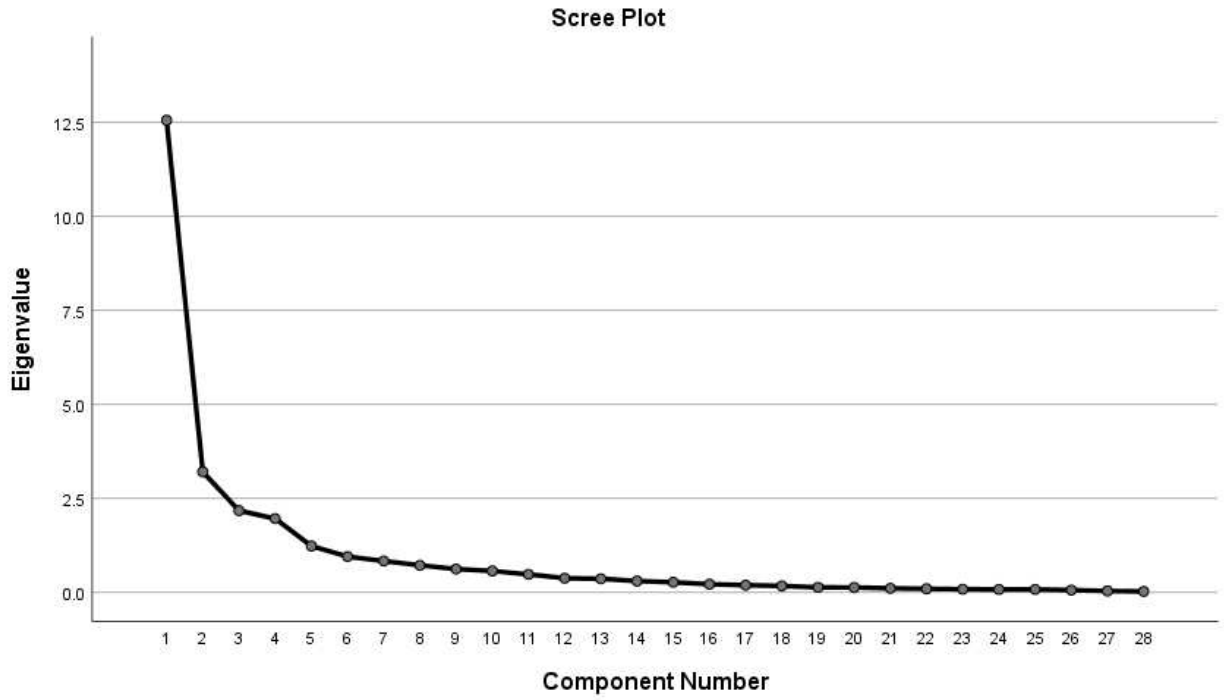
Communalities		
	Initial	Extraction
ExpMessage1	1.000	.843
ExpMessage2	1.000	.889
ExpMessage3	1.000	.830
InfoPrBelief1	1.000	.771
InfoPrBelief2	1.000	.816
InfoPrBelief3	1.000	.746
InfoPrAttitude1	1.000	.776
InfoPrAttitude2	1.000	.904
InfoPrAttitude3	1.000	.921
InfoPrAttitude4	1.000	.786
ProfIssueInt1	1.000	.845
ProfIssueInt2	1.000	.890
ProfIssueInt3	1.000	.837
ToleDiv1	1.000	.892
ToleDiv2	1.000	.838
InfoPrCult_V1	1.000	.896
InfoPrCult_V2	1.000	.886
InfoPrCult_V3	1.000	.912
InfoPrCult_V4	1.000	.829
RedJobTens1	1.000	.881
RedJobTens2	1.000	.875
RedJobTens3	1.000	.891
RedJobTens4	1.000	.763
ColHipComPrac1	1.000	.907

ColHipComPrac2	1.000	.765
ColHipComPrac3	1.000	.791
ColHipComPrac4	1.000	.847
ColHipComPrac5	1.000	.801
Extraction Method: Principal Component Analysis.		

F 4. Total Variance Explained

Total Variance Explained									
	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	12.553	44.831	44.831	12.553	44.831	44.831	4.779	17.066	17.066
2	3.203	11.440	56.271	3.203	11.440	56.271	3.588	12.814	29.880
3	2.175	7.766	64.038	2.175	7.766	64.038	3.361	12.003	41.883
4	1.960	7.001	71.039	1.960	7.001	71.039	3.204	11.443	53.327
5	1.232	4.400	75.439	1.232	4.400	75.439	3.153	11.259	64.586
6	.951	3.397	78.836	.951	3.397	78.836	3.003	10.726	75.312
7	.833	2.975	81.812	.833	2.975	81.812	1.455	5.196	80.508
8	.719	2.566	84.378	.719	2.566	84.378	1.083	3.870	84.378
9	.620	2.215	86.593						
10	.569	2.032	88.625						
11	.477	1.704	90.329						

12	.376	1.342	91.671						
13	.360	1.286	92.958						
14	.300	1.072	94.029						
15	.268	.957	94.986						
16	.217	.776	95.762						
17	.189	.677	96.439						
18	.171	.610	97.048						
19	.133	.476	97.525						
20	.129	.460	97.985						
21	.108	.386	98.371						
22	.095	.341	98.712						
23	.084	.301	99.013						
24	.078	.278	99.291						
25	.077	.275	99.566						
26	.059	.212	99.778						
27	.037	.133	99.911						
28	.025	.089	100.000						
Extraction Method: Principal Component Analysis.									



F5. Component Matrix

Component Matrix[a]								
	Component							
	1	2	3	4	5	6	7	8
ProfIssueInt2	.802	-.146	-.092	.056	-.449	.039	.083	.067
ToleDiv2	.795	.161	.078	-.065	-.237	-.132	.106	-.291
ColHipComPrac1	.785	-.225	-.344	-.294	.088	.028	.119	.110
InfoPrBelief2	.784	.072	-.277	.282	.010	-.154	.110	-.059
ProfIssueInt1	.780	-.252	-.149	.009	-.334	.197	.026	-.007
ProfIssueInt3	.767	-.091	-.140	-.232	-.357	.130	.049	-.144
InfoPrAttitude3	.765	-.408	-.127	.320	.043	-.168	-.137	.048
InfoPrCult_V1	.748	-.455	.219	.134	-.037	-.018	.247	.030
InfoPrAttitude2	.746	-.244	-.238	.412	-.079	-.187	-.124	.073
ColHipComPrac5	.742	-.179	-.276	-.281	.214	.045	.115	-.047
InfoPrAttitude4	.737	-.349	.049	.082	.164	-.172	-.206	-.116
RedJobTens2	.734	.360	.021	-.303	-.127	-.240	-.056	.193
ColHipComPrac3	.696	.024	-.347	-.133	.365	.175	-.054	-.017
InfoPrAttitude1	.663	-.344	-.033	.291	.221	-.197	.184	.105
InfoPrBelief1	.659	.224	.122	.320	.105	.017	-.299	-.261
RedJobTens3	.641	.378	.345	-.392	.052	-.163	-.111	.150
RedJobTens1	.639	.525	.024	-.256	-.141	-.214	-.231	.105
ColHipComPrac4	.621	.104	-.130	-.279	.519	.175	.048	-.232
ExpMessage1	.603	.328	.080	.342	-.146	.417	.156	.168
ToleDiv1	.596	.240	.394	-.272	-.094	-.177	.211	-.406
ColHipComPrac2	.595	-.021	-.352	-.449	.009	.250	-.002	.151
RedJobTens4	.593	.529	-.130	.046	.052	-.063	-.194	.260
InfoPrCult_V2	.585	-.415	.475	-.062	-.086	.294	-.220	-.011
InfoPrCult_V4	.574	-.368	.515	.072	.249	-.052	.045	.162
InfoPrBelief3	.499	.469	-.235	.422	.027	.032	-.141	-.147
ExpMessage2	.399	.655	.161	.377	.094	.349	.029	-.027
ExpMessage3	.403	.502	.309	.168	.164	-.114	.476	.159
InfoPrCult_V3	.536	-.242	.693	-.106	.065	.172	-.185	.081

Extraction Method: Principal Component Analysis.
a. 8 components extracted.

F 6. Rotated Component Matrix

Rotated Component Matrix[a]								
	Component							
	1	2	3	4	5	6	7	8
InfoPrAttitude3	.852	.211	.079	.263	.109	.239	-.007	-.077
InfoPrAttitude2	.842	.122	.140	.083	.228	.308	-.035	-.068
InfoPrAttitude1	.755	.252	-.002	.235	.057	.099	.034	.271
InfoPrAttitude4	.665	.306	.153	.400	.042	.089	.190	-.146
InfoPrBelief2	.649	.290	.215	-.083	.363	.279	.175	.130
InfoPrCult_V1	.589	.185	-.035	.508	-.005	.388	.177	.272
ColHipComPrac4	.123	.811	.139	.165	.231	-.065	.262	.045
ColHipComPrac3	.315	.758	.184	.065	.256	.114	-.004	-.032
ColHipComPrac5	.366	.721	.172	.126	-.018	.278	.139	.062
ColHipComPrac1	.416	.688	.243	.101	-.080	.420	.013	.085
ColHipComPrac2	.047	.680	.301	.055	-.004	.442	-.099	-.034
RedJobTens1	.084	.175	.837	.035	.272	.179	.186	-.023
RedJobTens2	.185	.256	.791	.095	.133	.273	.166	.140
RedJobTens3	-.003	.242	.772	.368	.134	.051	.234	.163
RedJobTens4	.199	.224	.645	-.049	.485	.074	-.095	.069
InfoPrCult_V3	.111	.064	.187	.913	.070	.094	.113	.033
InfoPrCult_V2	.200	.125	.027	.833	.059	.326	.080	-.142
InfoPrCult_V4	.431	.128	.081	.738	-.019	-.017	.068	.265
ExpMessage2	-.064	.054	.177	.085	.890	.019	.072	.213
InfoPrBelief3	.324	.114	.225	-.201	.718	.064	.113	-.069
ExpMessage1	.118	.092	.125	.195	.706	.423	-.074	.290
InfoPrBelief1	.398	.128	.237	.251	.605	.001	.278	-.182
ProfIssueInt2	.456	.128	.245	.181	.150	.733	.108	.050
ProfIssueInt1	.412	.284	.102	.237	.147	.706	.073	-.060
ProfIssueInt3	.236	.358	.247	.159	.086	.692	.274	-.081
ToleDiv1	.033	.148	.366	.280	.122	.181	.755	.195
ToleDiv2	.317	.189	.371	.142	.252	.421	.547	.068
ExpMessage3	.075	.020	.308	.076	.410	-.059	.211	.712

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 9 iterations.

F 7. Component Transformation Matrix

Component Transformation Matrix								
Component	1	2	3	4	5	6	7	8
1	.519	.426	.383	.323	.305	.390	.210	.094
2	-.411	-.059	.513	-.367	.595	-.168	.134	.171
3	-.216	-.423	.088	.774	.026	-.200	.266	.237
4	.516	-.463	-.379	-.083	.568	-.115	-.163	.079
5	.108	.557	-.137	.126	.078	-.776	-.088	.166
6	-.483	.308	-.435	.287	.438	.334	-.295	-.098
7	-.057	.092	-.319	-.211	-.121	.222	.244	.848
8	.038	-.088	.359	.110	-.129	.059	-.828	.380
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.								

References

Adams, A., & Blandford, A. (2005). Bridging the gap between organizational and user perspectives of security in the clinical domain. *International Journal of Human-Computer Studies*, *63*(1), 175-202.

Adams, Anne & Sasse, Angela. (2001). Privacy in Multimedia Communications: Protecting Users, Not Just Data. 49–6.

Adkins, B., & Caldwell, D. (2004). Firm or subgroup culture: where does fitting in matter most?. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, *25*(8), 969-978.

Ahmed, A., & Ramzan, M. (2013). Effects of job stress on employees job performance a study on banking sector of Pakistan. *IOSR Journal of Business and Management*, *11*(6), 61-68.

Allen, T. T., & Davis, N. (2010, December). A simple agent-based social impact theory model of student STEM selection. In *Simulation Conference (WSC), Proceedings of the 2010 Winter* (pp. 278-289). IEEE.

Anderson, P., De Bruijn, A., Angus, K., Gordon, R., & Hastings, G. (2009). Impact of alcohol advertising and media exposure on adolescent alcohol use: a systematic review of longitudinal studies. *Alcohol and alcoholism*, *44*(3), 229-243.

Angst, C. M., & Agarwal, R. (2009). Adoption of electronic health records in the presence of privacy concerns: the elaboration likelihood model and individual persuasion. *MIS quarterly*, *33*(2), 339-370.

Appari, A., Johnson, M.E., & Anthony, D. (2009). HIPAA compliance: an institutional theory perspective. Proceeding of Americas Conference of Information Systems (AMCIS). San Francisco, CA.

Ary, D., Jacobs, L. C., & Razavieh, A. (1990). Introduction to research in education. Orlando, FL: Holt, Rinehart and Winston.

Awad, N. F., & Krishnan, M. S. (2006). The personalization privacy paradox: An empirical evaluation of information transparency and the willingness to be profiled online for personalization. *MIS Quarterly, 30*(1), 13-28.

Ball, E., Chadwick, D. W., & Mundy, D. (2003). Patient privacy in electronic prescription transfer. *Security & Privacy, IEEE*, *1*(2), 77-80.

Bandura, A. (1997). *Self-efficacy: The exercise of control*. Macmillan.

Bansal, G., Zahedi, F., & Gefen, D. (2007). The impact of personal dispositions on privacy and trust in disclosing health information online. *AMCIS 2007 Proceedings*, 57.

Bansal, G., & Gefen, D. (2015). The role of privacy assurance mechanisms in building trust and the moderating role of privacy concern. *European Journal of Information Systems*, *24*(6), 624-644.

Bates, D., Mächler, M., Bolker, B., & Walker, S. (2014). Fitting linear mixed-effects models using lme4. *arXiv preprint arXiv:1406.5823*.

Belanger, F., Hiller, J. S., & Smith, W. J. (2002). Trustworthiness in electronic commerce: the role of privacy, security, and site attributes. *The Journal of Strategic Information Systems*, *11*(3), 245-270.

Bélanger, F., & Crossler, R. E. (2011). Privacy in the digital age: a review of information privacy research in information systems. *MIS quarterly*, *35*(4), 1017-1042.

Bellman, S., Johnson, E. J., Kobrin, S. J., & Lohse, G. L. (2004). International differences in information privacy concerns: A global survey of consumers. *The Information Society*, *20*(5), 313-324.

Bhattacherjee, A., & Sanford, C. (2006). Influence processes for information technology acceptance: An elaboration likelihood model. *MIS quarterly*, 805-825.

Bishop, L., Holmes, B. J., & Kelley, C. M. (2005). National consumer health privacy Survey 2005: executive summary.

Blumenthal, D., & Tavenner, M. (2010). The meaningful regulation for electronic health records. *New England Journal of Medicine, 363*(6), 501-504.

Boudreau, M. C., Gefen, D., & Straub, D. W. (2001). Validation in information systems research: a state-of-the-art assessment. *MIS quarterly*, 1-16.

Boyd, R., & Richerson, P. J. (2005). Not by genes alone. *How Culture Transformed*.

Bordogna, C. M., & Albano, E. V. (2007). Statistical methods applied to the study of opinion information models: a brief overview and results of a numerical study of a model based on the social impact theory. *Journal of Physics: Condensed Matter*, *19*(6), 065144.

Bowen, A. M., & Bourgeois, M. J. (2001). Attitudes toward lesbian, gay, and bisexual college students: The contribution of pluralistic ignorance, dynamic social impact, and contact theories. *Journal of American College Health*, *50*(2), 91-96.

Breaux, T. D., Vail, M. W., & Anton, A. I. (2006, September). Towards regulatory compliance: Extracting rights and obligations to align requirements with regulations. In *Requirements Engineering, 14th IEEE International Conference* (pp. 49-58). IEEE.

Browne, M. W., Cudeck, R., Tateneni, K., & Mels, G. (2004). CEFA: Comprehensive exploratory factor analysis, Version 2.00. *Computer software and manual]*. *Retrieved from http://quantrm2. psy. ohio-state. edu/browne*.

Cacioppo, J. T., Petty, R. E., Kao, C. F., & Rodriguez, R. (1986). Central and peripheral routes to persuasion: An individual difference perspective. *Journal of personality and social psychology*, *51*(5), 1032.

Carmines, E. G., & Zeller, R. A. (1979). *Reliability and validity assessment* (Vol. 17). Sage publications.

Chen, G., & Kanfer, R. (2006). Toward a systems theory of motivated behavior in work teams. *Research in organizational behavior*, *27*, 223-267.

Chen, K., & Rea Jr, A. L. (2004). Protecting personal information online: A survey of user privacy concerns and control techniques. *Journal of Computer Information Systems*, *44*(4), 85-91.

Church, A. H. (1993). Estimating the effect of incentives on mail survey response rates: A meta-analysis. *Public opinion quarterly*, *57*(1), 62-79.

Churchill Jr, G. A. (1979). A paradigm for developing better measures of marketing constructs. *Journal of marketing research*, 64-73.

Cohen, J. (1988). Statistical power analysis for the behavioral sciences. Hilsdale. *NJ: Lawrence Earlbaum Associates*, *2*.

Cohen, J. (1992). Statistical power analysis. *Current directions in psychological science*, *1*(3), 98-101.

Coombs, R., Knights, D., & Willmott, H. C. (1992). Culture, control and competition; towards a conceptual framework for the study of information technology in organizations. *Organization studies*, *13*(1), 051-72.

Collins, R. L., Ellickson, P. L., McCaffrey, D., & Hambarsoomians, K. (2007). Early adolescent exposure to alcohol advertising and its relationship to underage drinking. *Journal of adolescent health*, *40*(6), 527-534.

Cronbach, L. J. (1989). Construct validation after thirty years. *Intelligence: Measurement, theory, and public policy*, *3*, 147-171.

Culnan, M. J. (1993). " How Did They Get My Name?": An Exploratory Investigation of Consumer Attitudes Toward Secondary Information Use. *MIS Quarterly*, *17*(3), 341-363.

Cullen, R. (2009). Culture, identity and information privacy in the age of digital government. *Online Information Review*, *33*(3), 405-421.

Culnan, M. J., & Armstrong, P. (1999). Information privacy concerns, procedural fairness, and impersonal trust: An empirical investigation. *Organization Science, 10*(1), 104-115.

Cullum, J., & Harton, H. C. (2007). Cultural evolution: Interpersonal influence, issue importance, and the development of shared attitudes in college residence halls. *Personality and Social Psychology Bulletin*, *33, 1327-1339.*

Cullum, J. G., Okdie, B. M., & Harton, H. C. (2011). When my country is at war: Issue importance and interpersonal influence lead Iraq War attitudes to cluster within social networks. *Social Influence*, *6*(4), 231-248.

David L. Weakliem, & Robert Biggert. (1999). Region and Political Opinion in the Contemporary United States. *Social Forces*, *77*(3), 863.

DeCarlo, L. T. (1997). On the meaning and use of kurtosis. *Psychological Methods,* 2(3), 292-307.

Deutskens, E., De Ruyter, K., Wetzels, M., & Oosterveld, P. (2004). Response rate and response quality of internet-based surveys: An experimental study. *Marketing letters*, *15*(1), 21-36.

Dillard, J. P., & Pfau, M. (2002). *The persuasion handbook: Developments in theory and practice*. Sage Publications.

Dillman, D. A. (2000). Introduction to tailored design. *Mail and internet surveys: The tailored design method*, *3*, 31

Dinev, T., Bellotto, M., Hart, P., Russo, V., Serra, I., & Colautti, C. (2006). Privacy calculus model in e-commerce–a study of Italy and the United States. *European Journal of Information Systems*, *15*(4), 389-402.

Dinev, T., & Hart, P. (2006). An extended privacy calculus model for e-commerce transaction. *Information Systems Research, 17*(1), 61-80.

Dougherty, D. (1992). A practice-centered model of organizational renewal through product innovation. *Strategic Management Journal*, *13*(S1), 77-92.

Dourish, P., & Anderson, K. (2006). Collective information practice: Emploring privacy and security as social and cultural phenomena. *Human-computer Interaction*, *21*(3), 319-342.

Downey, S. N., van der Werff, L., Thomas, K. M., & Plaut, V. C. (2015). The role of diversity practices and inclusion in promoting trust and employee engagement. *Journal of Applied Social Psychology*, *45*(1), 35-44.

Dubé, L., & Robey, D. (1999). Software stories: three cultural perspectives on the

organizational practices of software development. *Accounting, Management and Information Technologies*, *9*(4), 223-259.

Ellickson, P. L., Collins, R. L., Hambarsoomians, K., & McCaffrey, D. F. (2005). Does alcohol advertising promote adolescent drinking? Results from a longitudinal assessment. *Addiction*, *100*(2), 235-246.

Eveland, W. P., & Garrett, R. K. (2014). Communication modalities and political knowledge. In *The Oxford handbook of political communication*.

Fedorowicz, J., & Ray, A. W. (2004). Impact of HIPAA on the integrity of healthcare information. *International Journal of Healthcare Technology and Management*, *6*(2), 142-157.

Feldman, R. A. (1968). Interrelationships among three bases of group integration. *Sociometry*, 30-46.

Earley, C. P., & Mosakowski, E. (2000). Creating hybrid team cultures: An empirical test of transnational team functioning. *Academy of Management Journal*, *43*(1), 26-49.

Fernando, J. I., & Dawson, L. L. (2009). The health information system security threat lifecycle: An informatics theory. *International Journal of Medical Informatics*, *78*(12), 815-826.

Fishbein, M., & Middlestadt, S. (1995). Noncognitive effects on attitude formation and change: fact or artifact? *Journal of Consumer Psychology*, *4*(2), 181-202.

Fishbein, M., & Ajzen, I. (1977). Belief, attitude, intention, and behavior: An introduction to theory and research.

Feldman, M. S., & March, J. G. (1981). Information in organizations as signal and symbol. *Administrative science quarterly*, 171-186.

Field, A. (2013). *Discovering statistics using IBM SPSS statistics*. Sage.

Ford, D. P., & Chan, Y. E. (2003). Knowledge sharing in a multi-cultural setting: a case study. *Knowledge Management Research & Practice*, *1*(1), 11-27.

Ford, D. P., Connelly, C. E., & Meister, D. B. (2003). Information systems research and Hofstede's culture's consequences: an uneasy and incomplete partnership. *Engineering Management, IEEE Transactions on*, *50*(1), 8-25.

Gallagher, C. A. (1974). Perceptions of the value of a management information system. *Academy of Management Journal*, *17*(1), 46-55.

Gallivan, M., & Srite, M. (2005). Information technology and culture: Identifying fragmentary and holistic perspectives of culture. *Information and organization*, *15*(4), 295-338.

Gefen, D., Karahanna, E., & Straub, D. W. (2003). Trust and TAM in online shopping: An integrated model. *MIS quarterly*, *27*(1), 51-90.

George, D., & Mallery, M. (2003). Using SPSS for Windows step by step: a simple guide and reference.

Gerald, B. (2018). A Brief Review of Independent, Dependent and One Sample t-test. *International Journal of Applied Mathematics and Theoretical Physics*, *4*(2), 50.

Gobbin, R. (1998). The role of cultural fitness in user resistance to information technology tools. *Interacting with Computers*, *9*(3), 275-285.

Goddard, R. D., Hoy, W. K., & Hoy, A. W. (2000). Collective teacher efficacy: Its meaning, measure, and impact on student achievement. *American Educational Research Journal*, *37*(2), 479-507.

Gold, A. H., & Arvind Malhotra, A. H. S. (2001). Knowledge management: An organizational capabilities perspective. *Journal of management information systems*, *18*(1), 185-214.

Gratton, C., & Jones, I. (2010). *Research methods for sports studies*. Routledge.

Greenaway, K. E., & Chan, Y. E. (2005). Theoretical Explanations for Firms' Information Privacy Behaviors. *Journal of the Association for Information Systems*, *6*(6).

Gregory, K. (1983). Native-View Paradigms: Multiple Cultures and Culture Conflicts in Organizations. *Administrative Science Quarterly, 28*(3), 359-376.

Greiner, M. E., & Wang, H. (2010). Building consumer-to-consumer trust in e-finance marketplaces: An empirical analysis. *International Journal of Electronic commerce*, *15*(2), 105-136.

Gully, S. M., Incalcaterra, K. A., Joshi, A., & Beaubien, J. M. (2002). A meta-analysis of team-efficacy, potency, and performance: interdependence and level of analysis as moderators of observed relationships. *Journal of applied psychology*, *87*(5), 819.

Gurung, A., & Prater, E. (2006). A research framework for the impact of cultural differences on IT outsourcing. *Journal of Global Information Technology Management*, *9*(1), 24-43.

Hart, C. (1998). Doing a literature review: Releasing the social science research imagination. London: Sage.

Harkins, M. (2012). *Managing Risk and Information Security: Protect to Enable*. Apress.

Heberlein, T. A., & Baumgartner, R. (1978). Factors affecting response rates to mailed questionnaires: A quantitative analysis of the published literature. *American sociological review*, 447-462.

HIPAA Settlements, Fines, and Penalties. (2018, December 11). Retrieved from https://compliancy-group.com/hipaa-fines-directory-year/

Ho, S. Y., & Bodoff, D. (2014). The effects of Web personalization on user attitude and behavior: An integration of the elaboration likelihood model and consumer search theory. *MIS quarterly*, *38*(2).

Hodson, G., Esses, V., & Dovidio, J. (2006). Perceptions of threat, national representation, and support for policies and procedures to protect the national group. *Collateral damage: The psychological consequences of America's war on terrorism*, 109-129.

Hoffman, D. L., Novak, T. P. (1996). Marketing in hypermedia computer-mediated environment: Conceptual foundations. *Journal of Marketing, 60*(1), 50-68.

Hofstede, G., & Bond, M. H. (1984). Hofstede's culture dimensions an independent validation using Rokeach's value survey. *Journal of cross-cultural psychology*, *15*(4), 417-433.

Hofstede, G. (1980). Motivation, leadership, and organization: do American theories apply abroad?. *Organizational dynamics*, *9*(1), 42-63.

Hofstede, G. (1984). *Culture's consequences: International differences in work-related values* (Vol. 5). sage.

Hui, K. L., Teo, H. H., & Lee, S. Y. T. (2007). The value of privacy assurance: an exploratory field experiment. *MIS Quarterly*, *31*(1), 19-33.

Hsu, C. W. J. (2006). Privacy concerns, privacy practices and web site categories: Toward a situational paradigm. *Online Information Review*, *30*(5), 569-586.

Iivari, J., & Huisman, M. (2007). The relationship between organizational culture and the deployment of systems development methodologies. *Mis Quarterly*, 35-58.

Indik, B., Seashore, S. E., & Slesinger, J. (1964). Demographic correlates of psychological strain. *The Journal of Abnormal and Social Psychology*, *69*(1), 26.

Ishikawa, K., Ohmichi, H., Umesato, Y., Terasaki, H., Tsukuma, H., Iwata, N., ... &

Tooya, M. (2007). The guideline of the personal health data structure to secure safety healthcare: The balance between use and protection to satisfy the patients' needs. *International Journal of Medical Informatics*, *76*(5), 412-418.

Johnston, A. C., & Warkentin, M. (2008). Information privacy compliance in the healthcare industry. *Information Management & Computer Security*, *16*(1), 5-19.

Kaarst-Brown, M. L., Nicholson, S., Von Dran, G. M., & Stanton, J. M. (2004). Organizational cultures of libraries as a strategic resource.

Kahn, R. L., Wolfe, D. M., Quinn, R. P., Snoek, J. D., & Rosenthal, R. A. (1964). Organizational stress: Studies in role conflict and ambiguity.

Kameda, T., & Sugimori, S. (1995). Procedural influence in two-step group decision making: Power of local majorities in consensus formation. *Journal of Personality and Social Psychology, 69*(5), 865-876.

Kappos, A., & Rivard, S. (2008). A three-perspective model of culture, information systems, and their development and use. *MIS quarterly*, 601-634.

Karat, J., Karat, C. M., Brodie, C., & Feng, J. (2005). Privacy in information technology: Designing to enable privacy policy management in organizations. *International Journal of Human-Computer Studies*, *63*(1), 153-174.

Karahanna, E., Evaristo, J. R., & Srite, M. (2006). Levels of culture and individual behaviour: An integrative perspective. *Advanced Topics in Global Information Management*, *5*(1), 30-50.

Karjaluoto, H., Mattila, M., & Pento, T. (2002). Actors underlying attitude formation towards online banking in Finland. *International journal of bank marketing*, *20*(6), 261-272.

Karsh, B., Weinger, M. B., Abbott, P. A., & Wears, R. L. (2010). Health information technology: Fallacies and sober realities. *Journal of the American Medical Informatics Association, 17*(6), 617-623.

Kauffman, T. (2006). Your Health Records Online: OPM: Benefits Will Outweigh Risks. *FederalTimes. com*.

Kilbridge, P. (2003). The cost of HIPAA compliance. *New England Journal of Medicine*, *348*(15), 1423-1477.

Kiggundu, M. N. (1983). Task interdependence and job design: Test of a theory. *Organizational behavior and human performance*, *31*(2), 145-172.

Kohring, G. A. (1996). Ising models of social impact: the role of cumulative advantage. *Journal de Physique I*, *6*(2), 301-308.

Kolekofski Jr, K. E., & Heminger, A. R. (2003). Beliefs and attitudes affecting intentions to share information in an organizational setting. *Information & management*, *40*(6), 521-532.

Latané, B., & Wolf, S. (1981). The social impact of majorities and minorities. *Psychological Review*, *88*(5), 438.

Latane, B. (1996). Strength from weakness: The fate of opinion minorities in spatially distributed groups. *Understanding group behavior: Consensual action by small groups*, *1*, 193-219.

Latané, B., & Bourgeois, M. J. (1996). Experimental evidence for dynamic social impact: The emergence of subcultures in electronic groups. *Journal of Communication*, *46*(4), 35-47.

Latané, B. (1996a). Dynamic social impact: The creation of culture by communication. *Journal of Communication*, *46*(4), 13-25.

Latané, B., & Nowak, A. (1997). Self-organizing social systems: Necessary and sufficient conditions for the emergence of consolidation and clustering. *Persuasion* (43-74).

Lehmiller, J. J., & Schmitt, M. T. (2008). Intergroup attitudes and values in response to the US invasion of Iraq. *Peace and Conflict: Journal of Peace Psychology*, *14*(3), 259-274.

Leidner, D. E., & Jarvenpaa, S. L. (1995). The use of information technology to enhance management school education: A theoretical view. *MIS Quarterly, 19*(3), 265-291.

Leidner, D. E., & Kayworth, T. (2006). Review: a review of culture in information systems research: toward a theory of information technology culture conflict. *MIS quarterly*, *30*(2), 357-399.

Lewenstein, M., Nowak, A. & Latane,B. (1992). Statistical mechanics of social impact. *Physical Review A*, 45, 703-716.

Levitan, L. C., & Visser, P. S. (2009). Social network composition and attitude strength: Exploring the dynamics within newly formed social networks. *Journal of Experimental Social Psychology*, *45*(5), 1057-1067.

Vaast, E. (2007). Danger is in the eye of the beholders: Social representations of Information Systems security in healthcare. *The Journal of Strategic Information Systems*, *16*(2), 130-152.

Li, C. Y. (2013). Persuasive messages on information system acceptance: A theoretical

extension of elaboration likelihood model and social influence theory. *Computers in Human Behavior*, *29*(1), 264-275.

Liginlal, D., Sim, I., Khansa, L., & Fearn, P. (2009). Human Error and Privacy Breaches in Healthcare Organizations: Causes and Management Strategies. *AMCIS 2009 Proceedings*, 406.

Lin, Y., & Wu, H. Y. (2008). Information privacy concerns, government involvement, and corporate policies in the customer relationship management context. *Journal of Global Business & Technology*, *4*(1), 79-91

Liu, C., & Arnett, K. P. (2002). Raising a red flag on global www privacy policies. *Journal of Computer Information Systems*, *43*(1), 117-126

Liu, C., Marchewka, J. T., Lu, J., & Yu, C. S. (2004). Beyond concern: a privacy–trust–behavioral intention model of electronic commerce. *Information & Management*, *42*(1), 127-142.

Lorence, D. P., & Richards, M. C. (2003). Adoption of regulatory compliance programs across United States healthcare organizations: a view of institutional disobedience. *Health Services Management Research*, *16*(3), 167-178.

Lowry, P. B., Moody, G., Vance, A., Jensen, M., Jenkins, J., & Wells, T. (2012). Using an elaboration likelihood approach to better understand the persuasiveness of website privacy assurance cues for online consumers. *Journal of the Association for Information Science and Technology*, *63*(4), 755-776.

Lusch, R. F., & Serpkenci, R. R.. (1990). Personal Differences, Job Tension, Job Outcomes, and Store Performance: A Study of Retail Store Managers. *Journal of Marketing*, *54*(1), 85– 101.

Lyons, T. F. (1971). Role clarity, need for clarity, satisfaction, tension, and withdrawal. *Organizational Behavior and Human Performance*, *6*(1), 99-110.

Malhotra, N. K., Kim, S. S., & Agarwal, J. (2004). Internet users' information privacy concerns (IUIP): The construct, the scale, and a causal model. *Information Systems Research, 15*(4), 336-355.

Marakas, G. M., Johnson, R. D., & Clay, P. F. (2007). The evolving nature of the computer self-efficacy construct: An empirical investigation of measurement construction, validity, reliability and stability overtime. *Journal of the Association of Information Systems, 8*(1), 16-46.

Margulis, S. T. (2003). Privacy as a social issue and behavioral concept. *Journal of Social Issues*, *59*(2), 243-261.

McIntyre, R. B., Lord, C. G., Gresky, D. M., Ten Eyck, L. L., Frye, G. J., & Bond Jr, C. F.

(2005). A social impact trend in the effects of role models on alleviating women's mathematics stereotype threat. *Current Research in Social Psychology*, *10*(9), 116-36.

Mir, I., & Zaheer, A. (2012). Verification of social impact theory claims in social media context. *Journal of Internet Banking and Commerce, 17*(1), 1-15.

Milberg, S. J., Smith, H. J., & Burke, S. J. (2000). Information privacy: Corporate management and national regulation. *Organization Science*, *11*(1), 35-57.

Milberg, S. J., Burke, S. J., Smith, H. J., & Kallman, E. A. (1995). Values, personal information privacy, and regulatory approaches. *Communications of the ACM*, *38*(12), 65-74.

Noah Mark. (1998). Birds of a Feather Sing Together. Social Forces, 77(2), 453.

Nettle, D. (1999). Using social impact theory to simulate language change. Lingua, 108(2), 95-117.

Nikitina, L., Mohd Don, Z., & Loh, S. C. (2014). Investigating stereotypes about the target language country: A case of German language learners. *RLA. Revista de Lingüística Teórica y Aplicada*, *52*(2), 113-131.

Norberg, P. A., Horne, D. R., & Horne, D. A. (2007). The privacy paradox: Personal information disclosure intentions versus behaviors. *Journal of Consumer Affairs*, *41*(1), 100-126.

Nowak, A., Szamrej, J., & Latané, B. (1990). From private attitude to public opinion: A dynamic theory of social impact. *Psychological Review*, *97*(3), 362.

Okdie, B. M. (2007). *Dynamic Social Impact Theory: Online Versus Face-to-face* (Doctoral dissertation, University of Northern Iowa).

O'Leary-Kelly, S. W., & Vokurka, R. J. (1998). The empirical assessment of construct validity. *Journal of operations management*, *16*(4), 387-405.

Ormrod, J. E., & Leedy, P. D. (2005). Practical research: Planning and design. *New Jersey, Pearson Merill Prentice hall*.

Onyx, J., & Bullen, P. (2000). Measuring social capital in five communities. *The journal of applied behavioral science*, *36*(1), 23-42.

Oyserman, D., Sakamoto, I., & Lauffer, A. (1998). Cultural accommodation: Hybridity and the framing of social obligation. *Journal of Personality and Social Psychology*, *74*(6), 1606.

Palvia, P., Leary, D., Mao, E., Midha, V., Pinjani, P., & Salam, A. F. (2004). Research methodologies in MIS: an update. *Communications of the Association for Information Systems*, *14*(1), 24.

Parks, R. F. (2012). *A Study of Organizational Responses to Information Privacy Threats in the Healthcare Context* (Doctoral dissertation, The Pennsylvania State University).

Pavlou, P. A., & Dimoka, A. (2006). The nature and role of feedback text comments in online marketplaces: Implications for trust building, price premiums, and seller differentiation. *Information Systems Research*, *17*(4), 392-414.

Pavlou, P. A., Liang, H., & Xue, Y. (2007). Understanding and mitigating uncertainty in online exchange relationships: A principal-agent perspective. *MIS quarterly*, *31*(1), 105-136.

Petty, R. E., Cacioppo, J. T., & Goldman, R. (1981). Personal involvement as a determinant of argument-based persuasion. *Journal of personality and social psychology*, *41*(5), 847.

Petty, R. E., & Wegener, D. T. (1999). The elaboration likeli-hood model current status And controversies, Dual pro-cess theories in social psychology, éds. S. Chaiken et Y. Trope.

Peter, J. P. (1981). Construct validity: A review of basic issues and marketing practices. *Journal of marketing research*, 133-145.

Price, V., & Zaller, J. (1993). Who gets the news? Alternative measures of news reception and their implications for research. *Public opinion quarterly*, *57*(2), 133-164.

Pritts, J., Choy, A., Emmart, L., & Hustead, J. (2003). The State of Health Privacy Second Edition: A Survey of State Health Privacy Statute. *Vol. I & II, http://ihcrp. georgetown. edu/papers. html*.

Randolph, J. J. (2009). A guide to writing the dissertation literature review. *Practical Assessment, Research & Evaluation*, *14*(13), 1-13.

Raubenheimer, J. (2004). An item selection procedure to maximize scale reliability and validity. *SA Journal of Industrial Psychology*, *30*(4), 59-64.

Reichers, A. E., & Schneider, B. (1990). Climate and culture: An evolution of constructs. *Organizational climate and culture*, *1*, 5-39.

Rice, B., Knox, K., Rice, J., Martin, N., Fieger, P., & Fitzgerald, A. (2017). Loyal employees in difficult settings: the compounding effects of inter-professional dysfunction and employee loyalty on job tension. *Personnel Review*, *46*(8), 1755-1769.

Richerson, P. J. & Boyd, R. (2005) Not by genes alone: How culture transformed human evolution. University of Chicago Press.

Robbins, N. (2000). Technology subcultures and indicators associated with high technology performance in schools. *Journal of Research on Computing in Education*, *33*(2), 111-124.

Robey, D., & Boudreau, M. C. (1999). Accounting for the contradictory organizational consequences of information technology: Theoretical directions and methodological implications. *Information systems research*, *10*(2), 167-185.

Röcker, C. (2010). Information privacy in smart office environments: a cross-cultural study analyzing the willingness of users to share context information. *In Computational Science and Its Applications–ICCSA, 4*(1), 93-106

Rose, E. A. (2006). An examination of the concern for information privacy in the New Zealand regulatory context. *Information & Management*, *43*(3), 322-335.

Rose, M. (2003). Good deal, bad deal? Job satisfaction in occupations. *Work, employment and society*, *17*(3), 503-530.

Rosenblum, J. (2001). Give and take. Quirk's marketing research review. *Retrieved May*, *21*, 2007.

Sackmann, S. A. (1992). Culture and subcultures: An analysis of organizational knowledge. *Administrative Science Quarterly*, 140-161.

Schein, E. H. (1985). How culture forms, develops, and changes. *Gaining control of the corporate culture*, 17-43.

Shin, Y., Kim, M., Choi, J. N., & Lee, S. H. (2016). Does team culture matter? Roles of team culture and collective regulatory focus in team task and creative performance. *Group & Organization Management*, *41*(2), 232-265.

Tribe, L.H., Schelling, C.S., & Voss, J. (1976). *When values conflict. Essays on environmental analysis, discourse, and decision*. United States.

Sekaran, U (2003). Research method for business: A skill building approach, 4th edition, John Wiley & Sons.

Sigler, T. H., & Pearson, C. M. (2000). Creating an empowering culture: examining the relationship between organizational culture and perceptions of empowerment. *Journal of Quality Management*, *5*(1), 27-52.

Schein, E. H. (1990). *Organizational culture* (Vol. 45, No. 2, p. 109). American Psychological Association.

Schwaig, K. S., Kane, G. C., & Storey, V. C. (2006). Compliance to the fair information practices: How are the Fortune 500 handling online privacy disclosures? *Information & Management*, *43*(7), 805-820.

Schwarz, A., Mehta, M., Johnson, N., & Chin, W. W. (2007). Understanding frameworks and reviews: a commentary to assist us in moving our field forward by analyzing our past. *ACM SIGMIS Database*, *38*(3), 29-50.

Son, J. Y., & Kim, S. S. (2008). Internet users' information privacy-protective responses: A taxonomy and a nomological model. *MIS Quarterly*, *32*(3), 503-529.

Smith, H. J., Milberg, S. J., & Burke, S. J. (1996). Information Privacy: Measuring Individuals' Concerns About Organizational Practices. *MIS Quarterly*, *20*(2), 167-196.

Smith, J. (2000). Towards a secure EPR: cultural and educational issues. *International journal of medical informatics, 60*(2), 137-142.

Snyder, L. B., Milici, F. F., Slater, M., Sun, H., & Strizhakova, Y. (2006). Effects of alcohol advertising exposure on drinking among youth. *Archives of pediatrics & adolescent medicine*, *160*(1), 18-24.

Srite, M., & Karahanna, E. (2006). The role of espoused national cultural values in technology acceptance. *MIS quarterly*, 679-704.

Stewart, K. A., & Segars, A. H. (2002). An empirical examination of the concern for information privacy instrument. *Information Systems Research*, *13*(1), 36-49.

Stewart, K. J., & Gosain, S. (2006). The impact of ideology on effectiveness in open source software development teams. *MIS Quarterly*, 291-314.

Stone, E. F., Gueutal, H. G., Gardner, D. G., & McClure, S. (1983). A field experiment comparing information-privacy values, beliefs, and attitudes across several types of organizations. *Journal of Applied Psychology*, *68*(3), 459-468.

Straub, D. W. (1989). Validating instruments in MIS research. *MIS quarterly*, 147-169.

Straub, D., Boudreau, M. C., & Gefen, D. (2004). Validation guidelines for IS positivist research. *The Communications of the Association for Information Systems*, *13*(1), 63.

Straub, D., Loch, K., Evaristo, R., Karahanna, E., & Srite, M. (2002). Toward a theory-based measurement of culture. *Human factors in information systems*, *10*(1), 61-65.

Tabachnick, B. G., Fidell, L. S., & Ullman, J. B. (2007). *Using multivariate statistics* (Vol. 5). Boston, MA: Pearson

Taylor, S., & Todd, P. A. (1995). Understanding information technology usage: A test of competing models. *Information systems research*, *6*(2), 144-176.

Thiesse, F. (2007). RFID, privacy and the perception of risk: a strategic framework. *The Journal of Strategic Information Systems*, *16*(2), 214-232.

Trice, H. M., & Beyer, J. M. (1993). The cultures of work organizations. Englewood Cliffs, NJ: Prentice-Hall, Inc.

Turner, J. C. (1982). Towards a cognitive redefinition of the social group. *Social identity And intergroup relations*, 15-40.

Vaast, E. (2007). Danger is in the eye of the beholders: Social representations of Information Systems security in healthcare. *The Journal of Strategic Information Systems*, *16*(2), 130- 152.

Valentine, S., & Fleischman, G. (2002). Ethics codes and professionals' tolerance of societal diversity. *Journal of Business Ethics*, *40*(4), 301-312.

Van Teijlingen, E., & Hundley, V. (2002). The importance of pilot studies. *Nursing Standard (through 2013)*, *16*(40), 33.

Venkatesh, V., & Zhang, X. (2010). Unified theory of acceptance and use of technology: US vs. China. *Journal of Global Information Technology Management*, *13*(1), 5-27.

Visser, P. S., Krosnick, J. A., & Simmons, J. P. (2003). Distinguishing the cognitive and behavioral consequences of attitude importance and certainty: A new approach to testing the common-factor hypothesis. *Journal of Experimental Social Psychology*, *39*(2), 118-141.

Visser, P. S., & Mirabile, R. R. (2004). Attitudes in the social context: the impact of social network composition on individual-level attitude strength. *Journal of personality and social psychology*, *87*(6), 779.

Walsh, I., & Kefi, H. (2008). The spinning top model, a new path to conceptualize culture and values: applications to IS research. *ICIS 2008 Proceedings*, 192.

Walsh, I., Kefi, H., & Baskerville, R. (2010). Managing culture creep: Toward a strategic model of user IT culture. *The Journal of Strategic Information Systems*, *19*(4), 257-280.

Wang, P. S., Beck, A. L., McKenas, D. K., Meneades, L. M., Pronk, N. P., Saylor, J. S., ... & Kessler, R. C. (2002). Effects of efforts to increase response rates on a

workplace chronic condition screening survey. *Medical Care*, 752-760.

Weber, Y., & Pliskin, N. (1996). The effects of information systems integration and organizational culture on a firm's effectiveness. *Information & Management*, *30*(2), 81-90.

Webster, J., & Watson, R. T. (2002). Analyzing the past to prepare for the future: Writing a literature review. *MIS quarterly*, xiii-xxiii.

Wenger, E. (1998). *Communities of practice: learning, meaning, and identity*. New York: Cambridge University Press.

Widaman, K. F. (1985). Hierarchically nested covariance structure models for multitrait-multimethod data. *Applied Psychological Measurement*, *9*(1), 1-26.

Yammarino, F. J., Skinner, S. J., & Childers, T. L. (1991). Understanding mail survey response behavior a meta-analysis. *Public Opinion Quarterly*, *55*(4), 613-639.

Yang, S. C., Hung, W. C., Sung, K., & Farn, C. K. (2006). Investigating initial trust toward e□tailers from the elaboration likelihood model perspective. *Psychology & Marketing*, *23*(5), 429-445.

Zhou, T. (2012). Understanding users' initial trust in mobile banking: An elaboration likelihood perspective. *Computers in Human Behavior*, *28*(4), 1518-1525.

Zivnuska, S., Kiewitz, C., Hochwarter, W. A., Perrewé, P. L., & Zellars, K. L. (2002). What is too much or too little? The curvilinear effects of job tension on turnover intent, value attainment, and job satisfaction. *Journal of Applied Social Psychology*, *32*(7), 1344-1360.